Resource Management Plan
for
Furby-North Property
San Diego County

June 2012

PARKS AND RECREATION
COUNTY OF SAN DIEGO
Where having fun is natural.

FURBY-NORTH PROPERTY

RESOURCE MANAGEMENT PLAN

June 29, 2012

Approved by:

Brian Albright, Director
County of San Diego
Department of Parks and Recreation

6/30/12
Date

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

LIST OF ACRONYMS

AMSL	above mean sea level
APN	Assessor's Parcel Number
CAL FIRE	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
CalTrans	California Department of Transportation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CTMP	Community Trails Master Plan
DPR	County of San Diego Department of Parks and Recreation
FESA	Federal Endangered Species Act
HCP	habitat conservation plan
MHPA	Multiple Habitat Planning Area
MSCP	Multiple Species Conservation Program
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
RMP	resource management plan
SANDAG	San Diego Association of Governments
SDGE	San Diego Gas and Electric
SDMMP	San Diego Management and Monitoring Program
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

In 2003, the County of San Diego Department of Parks and Recreation (DPR) acquired the 83-acre Furby-North property (Property) to contribute to the conservation of core habitat located in the southern portion of the City of San Diego Multiple Species Conservation Program Subarea Plan (City MSCP Subarea Plan) and to contribute to the build-out of the MSCP preserve system. DPR will be utilizing the Property as mitigation for public and private projects in accordance with the County of San Diego Board Policy I-138. As stated above, the Property is included in the City MSCP Subarea Plan and portions of the Property are within the City of San Diego Multi-Habitat Planning Area (MHPA).

1.1 Purpose of Resource Management Plan

This Resource Management Plan (RMP) has been prepared as a guidance document to manage and preserve the biological and cultural resources within the Property, and to provide management directives pursuant to the requirements of the City of San Diego MSCP Subarea Plan and the Framework Resource Management Plan (City of San Diego 1997). These management directives are similar to the Area Specific Management Directives of the County of San Diego MSCP Subarea Plan.

Specifically, this RMP will:

a) guide the management of vegetation communities/habitats, plant and animal species, cultural resources, and programs described herein to protect and, where appropriate, enhance biological and cultural values;

b) provide a descriptive inventory of the vegetation communities/habitats, plant and animal species, and the archaeological and/or historical resources that occur on this property;

c) establish the baseline conditions from which adaptive management will be determined and success will be measured; and

d) provide an overview of the operation and maintenance requirements to implement management goals.

1.1.1 Multiple Species Conservation Plan Background

The Multiple Species Conservation Program (MSCP) is a cooperative habitat program that encompasses 582,000 acres and establishes a 172,000-acre preserve system in southwestern San Diego County. The MSCP covers 85 plant and animal species and 23 vegetation communities. Agencies participating in the MSCP include the County, other local jurisdictions including the City of San Diego, the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game

(CDFG). Local jurisdictions and special districts implement their respective portions of the MSCP Plan (City of San Diego 1998) through Subarea plans, which describe specific implementing mechanisms for the MSCP. The combination of the subregional MSCP Plan and Subarea plans serve as a Multiple Species Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act (FESA), the Natural Community Conservation Planning (NCCP) Program pursuant to the California NCCP Act of 1991 and the California Endangered Species Act (CESA). Although the Property is owned and managed by the County it is located within the City of San Diego MSCP Subarea plan and portions of the Property are located within the MHPA.

1.1.2 City of San Diego MSCP Subarea Plan

The City MSCP Subarea Plan encompasses 206,124 acres within the MSCP Subregion. Within this area, the City has delineated a 56,831 acre MHPA for the purpose of protecting critical sensitive biological resources. The MHPA, which makes up the preserve system for the City MSCP Subarea Plan, is being assembled and managed for biological resources. To further that end, certain open space areas have been identified as priorities for conservation including the Southern Area (including Otay Mesa); Eastern Area; Urban Areas; Northern Area; Cornerstone Lands and San Pasqual Valley. Portions of the Property are identified as MHPA within the Southern Otay Mesa Area.

1.1.3 Framework Management Plan and Management Directives

According to Section 6.3.1 of the MSCP Plan and as a condition of the City's Implementing Agreement with the Wildlife Agencies (Section 10.6 B), the City was required to prepare a Framework Management Plan (FMP). The document was submitted to the Wildlife Agencies in March 1997. The FMP sets forth management goals and objectives, along with general management directives that apply to all areas of the City's MSCP Subarea Plan.

The FMP developed for the City MSCP Subarea Plan incorporates general management directives covering mitigation; restoration; public access, trails, and recreation; litter/trash and material storage; adjacency management issues; invasive exotics control and removal; and flood control. The FMP also includes specific management policies and directives for each portion of the subarea plan including the Otay Mesa Area; Otay River Valley; Tijuana River Valley; Eastern Area; Urban Habitat Lands; Northern Area; Lake Hodges and the San Pasqual Valley; Other Cornerstone Lands; and Vernal Pools. Chapter 5 of this RMP includes specific management directives for the Furby-North Property.

1.2 Implementation

1.2.1 Management Approach

A key concept of the MSCP is the use of "Adaptive Management Techniques" directed at the conservation and recovery of individual species. This term refers to modifying management actions when monitoring of the resources indicates that changes are needed. It is particularly useful where there is uncertainty regarding the efficacy of certain management measures and/or the needs of target species. Adaptive management and an associated monitoring program are designed to inform land managers of the status and trends of covered species, natural communities, and landscapes in a manner that provides data to allow informed management actions and decisions.

It is anticipated that the recommended management actions provided in this RMP will be dynamic in nature. Applying adaptive management, the effectiveness and appropriateness of recommended management actions would be determined through review of management goal and objective achievement so that changes can be made to management directives and implementation measures as needed. Adaptive management techniques depend upon the specific issues impacting the resources. Therefore, the techniques herein may be subject to change or revisions when applied. Additionally, the monitoring protocols/requirements for MSCP covered species and habitats will be revisited periodically by participants of the MSCP and are subject to change based on adoption of updated protocols. It is anticipated that this RMP will be revised once every five years, as needed. The RMP may be revised on a shorter time scale if there is a change in circumstance, for example, acquisition of additional Preserve land.

1.2.2 Responsible Parties/Designation of Land Manager

The County is responsible for management, biological monitoring, and meeting the conditions of MSCP coverage on County-owned lands conserved as part of the MSCP Preserve system. The Property is operated, administered, and managed by the County Department of Parks and Recreation (DPR) and the DPR District Park Manager assigned to the Preserve is the land manager. DPR (District Park Manager and staff of the Resources Management Division) will also be responsible for the implementation and enforcement of the RMP.

The Property is located in the management district of one senior park ranger and one park maintenance worker. The Property is patrolled two times per month. It is expected that many of the implementation measures, especially the maintenance tasks, will be carried out by the rangers who are most familiar with the site and currently patrol the Preserve.

1.2.3 Regulatory Context

The County's Park Rangers manage the daily operations of County parks/preserves and enforce Park rules and regulations pursuant to San Diego County Code of Regulatory Ordinances Title 4, Division 1, Chapter 1 County Parks and Recreation. In addition, per County Code of Regulatory Ordinance Sec 41.111, 41.112, 41.113, all wildlife, plant, historical artifacts, and geologic features are protected and are not to be damaged or removed. Any person who violates any provision of Sections 41.111, 41.112, 41.113 is guilty of a misdemeanor as provided in Sections 11.116, 11.117, and 11.118 of this Code, punishable by fines up to $2,500 a day for each day the person violates these sections. The Park Rangers will contact law enforcement who will cite the offending individual. In addition, if an individual does not comply with signs within a facility and ignores Park Ranger instructions, the individual could potentially be charged with a misdemeanor by law enforcement.

1.2.4 Funding Mechanism

Funding to implement this RMP will be provided by land management endowments collected as mitigation credits are sold in accordance with the MLP (I-138). Endowments, in general, are based on an annual management cost of $150 per acre but can vary based on identified management needs.

In addition, the County allocates general funds for costs to implement the MSCP, including funding for land management, stewardship, and adaptive management and monitoring. The County Board of Supervisors approved approximately $4.7 million of General Fund allocations for implementation of the MSCP for fiscal years 2009-10 and 2010-11 (County 2010a). Base funding for land management costs will be maintained for baseline preserves owned by the County and will be increased as lands are acquired in the future.

The County estimates that current funding levels will provide for adaptive management and monitoring on all currently owned preserve lands. Future regional funding sources are also anticipated to fund adaptive management and monitoring activities throughout the preserve system.

2.0 PROPERTY DESCRIPTION

2.1 Property Location

The Property is located near the U.S. Mexico border in Otay Mesa, California (Figure 1). It is situated along the border of the city of San Ysidro directly south of Highway 905 and east of Interstate 805. The Property is mapped within the southeast portion of Section 36 in Township 18 South, Range 2 West; shown on the Imperial Beach USGS 7.5' Quadrangle (Figure 2).

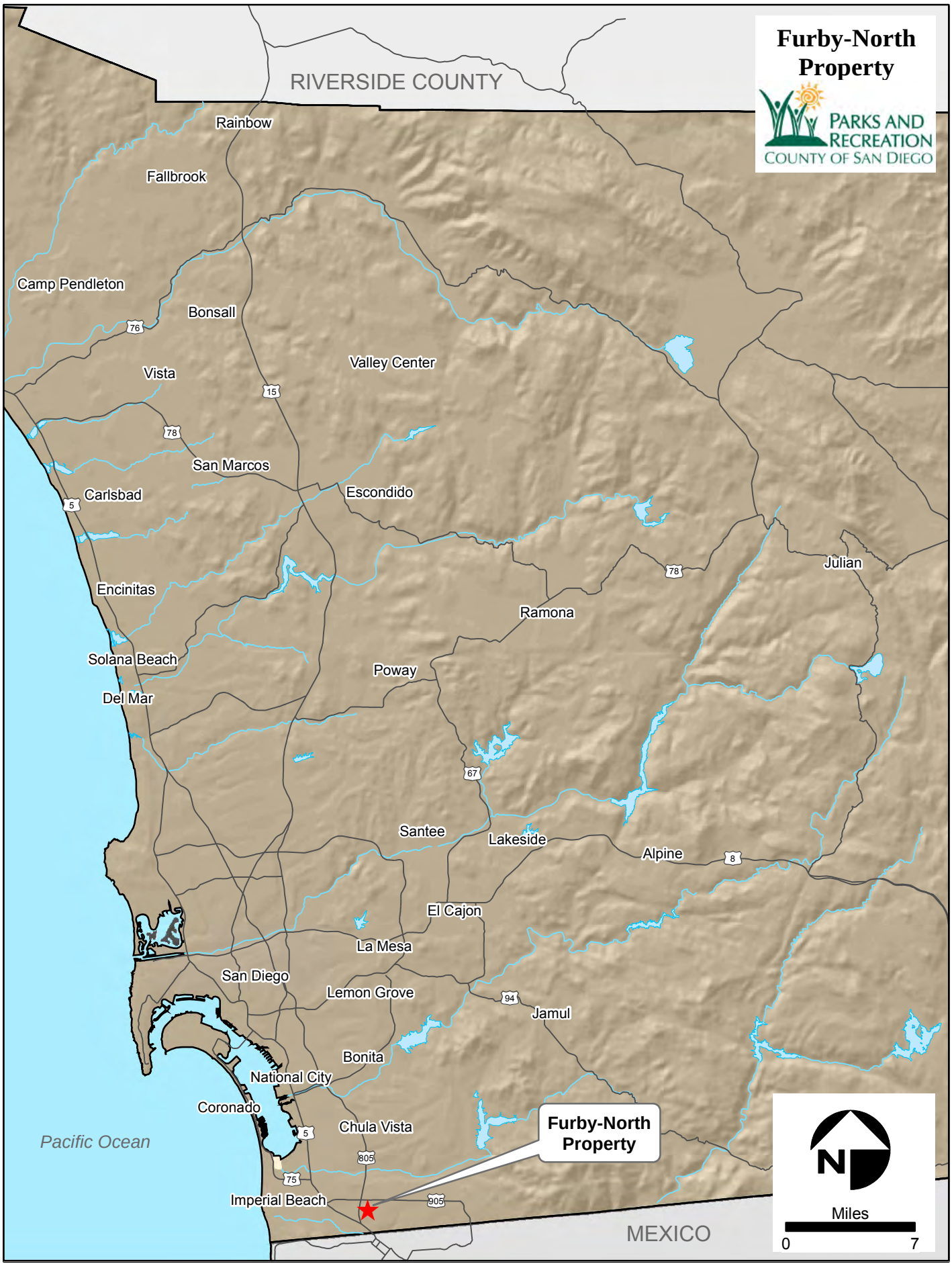
The entire Property is comprised of a single parcel, Assessor's Parcel Number (APN) 638-070-74. There is a small communications tower in-holding within the northern portion of the Property owned by the City of San Diego.

2.2 Geographical Setting

The Property is just south of the Otay River Valley and directly west of Pacific Gateway Park, west of Brown Field Municipal Airport. The Property rests just inland of the Tijuana River Valley National Estuarine Research Reserve along the United States-Mexico border. Moody Canyon terminates in the southern portion of the Property.

2.2.1 Site Access

The Property is currently not open to the public. Access for ranger patrol purposes is limited primarily to an east/west paved access road off of Otay Mesa Road.



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Regional Location Map

Figure 1

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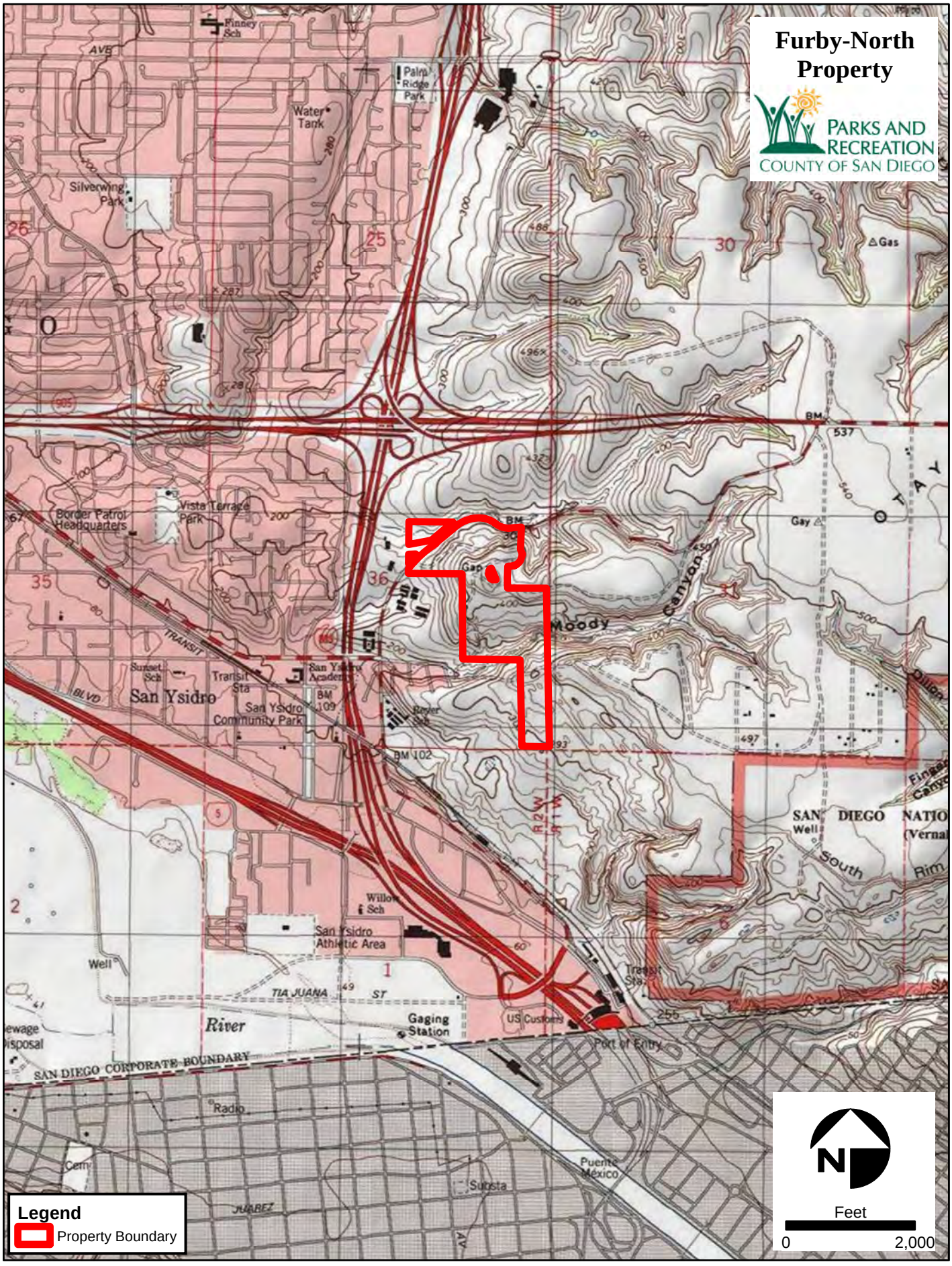

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USGS 7.5 Minute Imperial Beach Quadrangle

Figure 2

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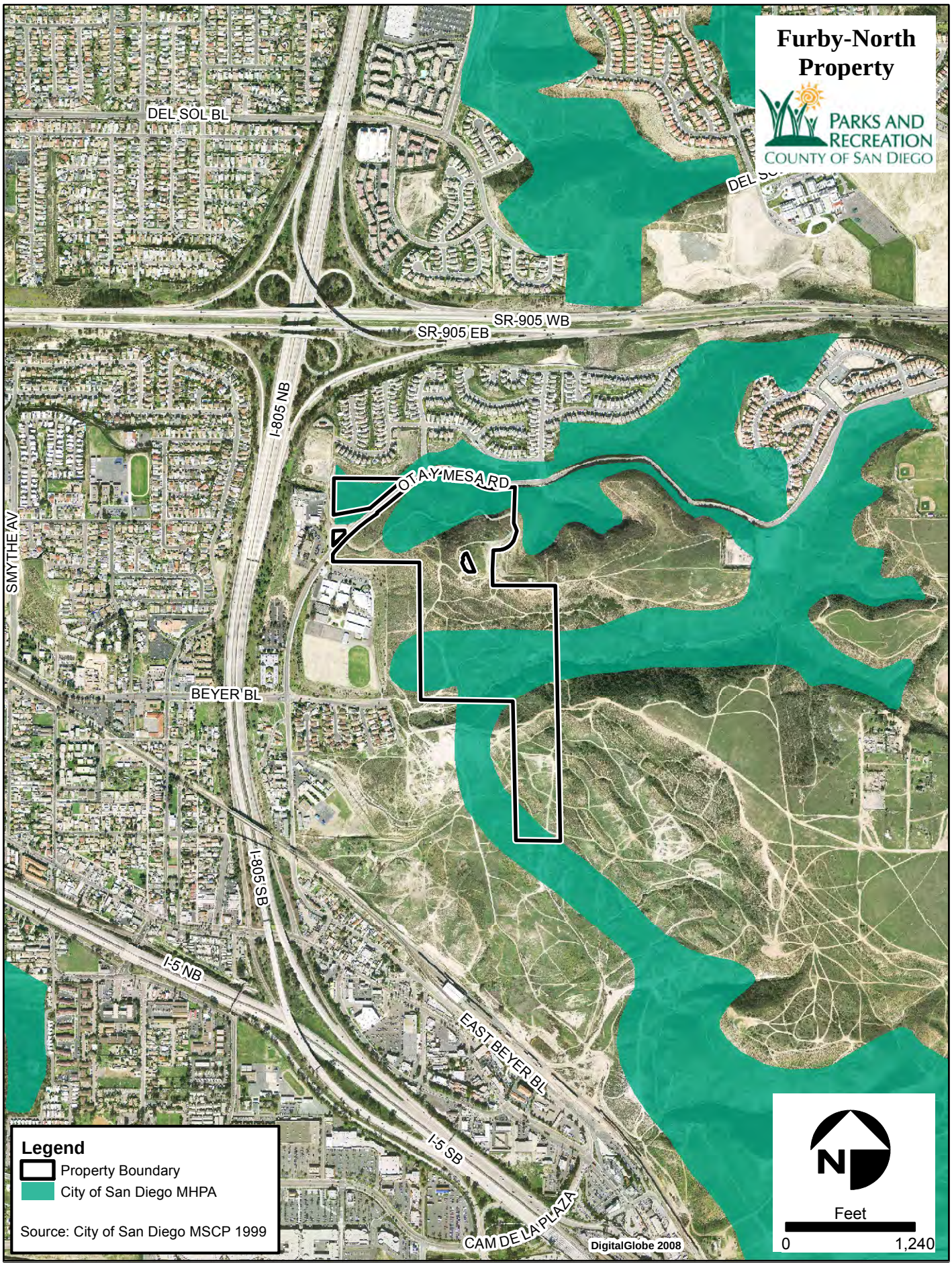
2.2.2 MSCP Context

The Property is located within the City of San Diego MSCP Subarea Plan. Portions of the Property are located within the southern Otay Mesa Area of the MHPA (Figure 3). The Property will be managed in accordance with the City of San Diego MSCP Subarea Plan and will be consistent with the County of San Diego Subarea Plan. The conserved lands within the City's MHPA total 53 percent of the vacant land in the City (61 percent of total habitat land in City). The City's MHPA preserves 77 percent of the core biological resource areas and 77 percent of the habitat linkages within its subarea. Lands which are outside of the biological core or linkage areas but are currently dedicated or designated as open space and provide some long term conservation value are included in the City's MHPA. The preservation of the Property by the County of San Diego allows the goals and objectives outlined in the City's MSCP Subarea Plan to be furthered, especially those specific to the Otay Mesa Area.

The Otay Mesa Area of the MHPA has very specific management policies and directives. These include preserving and maintaining a "network of open and relatively undisturbed canyons containing a full ensemble of native species which provide functional wildlife habitat and movement capability." The Property contributes to the preservation of open space contiguous with conserved lands owned and managed by private groups, the City of San Diego and California Department of Transportation (Caltrans) (to the east) and homeowner's associations (to the north) within the Otay Mesa Area (Figure 4).

2.2.3 City of San Diego General Plan Context

The Property is located within the Otay Mesa Community Plan area of the City of San Diego General Plan. The Otay Mesa Community Plan includes the goal to provide for a full and varied range of recreational opportunities accessible to all Otay Mesa residents by improving existing resources, designating additional community and neighborhood parks, providing readily accessible parks, and preserving natural resources and open space areas.



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City of San Diego MSCP Multi-Habitat Planning Area (MHPA)

Figure 3

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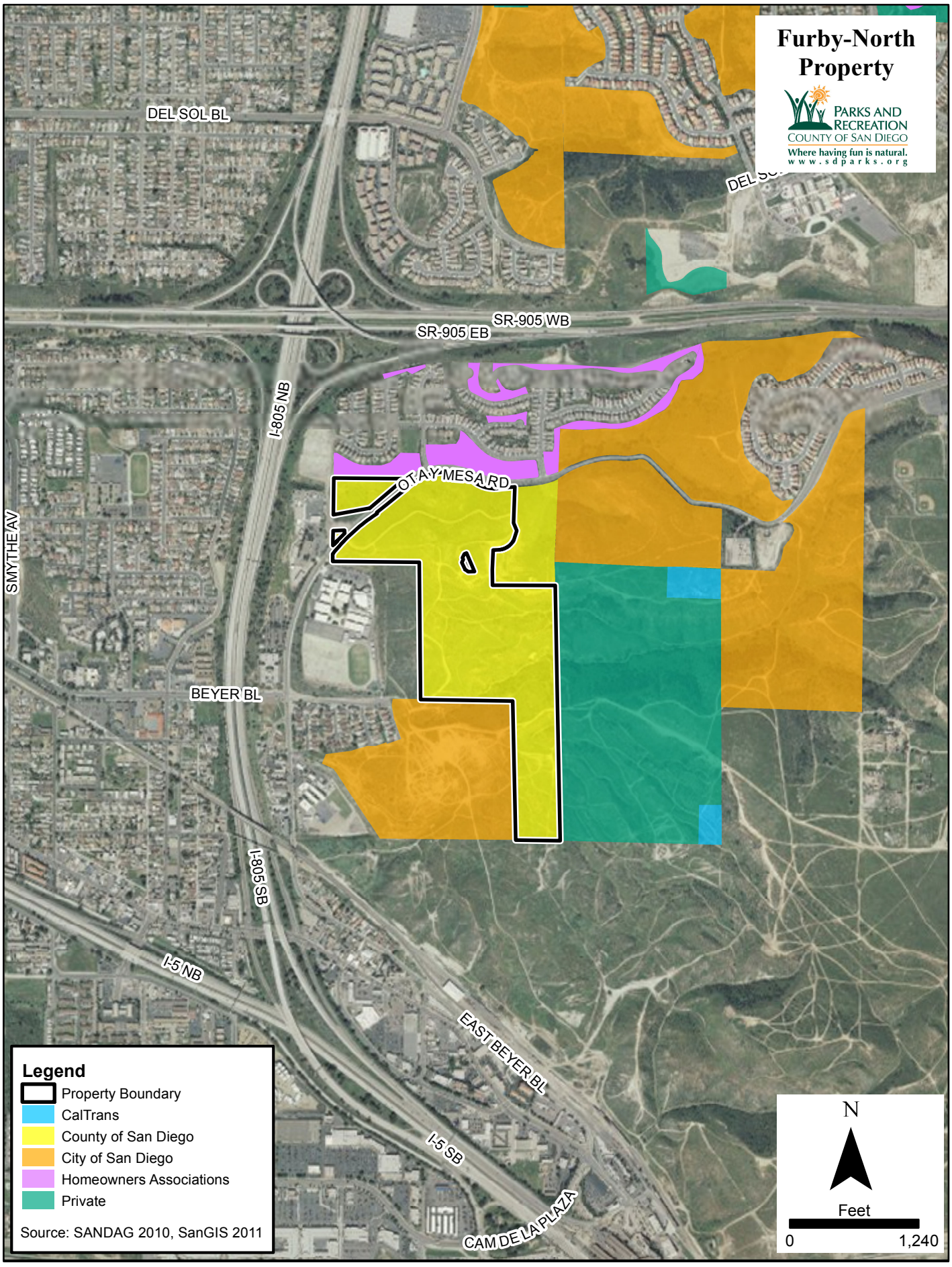

Conserved Lands by Ownership

Figure 4

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2.3 Physical and Climatic Conditions

2.3.1 Geology and Soils

The Property is located just south of the Otay River Valley, between the Elsinore Fault Zone and the Rose Canyon Fault Zone. The Property is situated at the base of the Peninsular Range, one of three distinct geomorphic regions in San Diego County. During the Jurassic and late Cretaceous (more than 100 million years ago) a series of volcanic islands ran parallel to the current coastline in the San Diego region. After the ocean receded, the remnants of these volcanic islands became mountain ranges such as the Santa Ana, San Jacinto, and Laguna Mountains. At about the same time, a granitic and gabbroic batholith was being formed under and east of these Jurassic and late Cretaceous-age volcanoes. This batholith was uplifted and forms the granitic rocks and outcrops of the Peninsular Range (California Division of Mines and Geology 1975). Shorty after this period, during the Tertiary (65-2.6 million years ago), the San Diego and Otay Formations were deposited in the Otay Mesa and Imperial Beach areas.

As a consequence of marine inundation in the Jurassic and Cretaceous and the subsequent receding waters during Tertiary (and the more recent Pleistocene), the soils formed on the Property are of moderate to high clay content and support vernal pools, coastal sage scrub, and maritime succulent scrub. Three different soil series are represented on the Property (Figure 5): Huerhuero, Olivenhain, and Diablo. A brief description of each soil series and associated soil types that occur on the Property is provided below.

Diablo Series

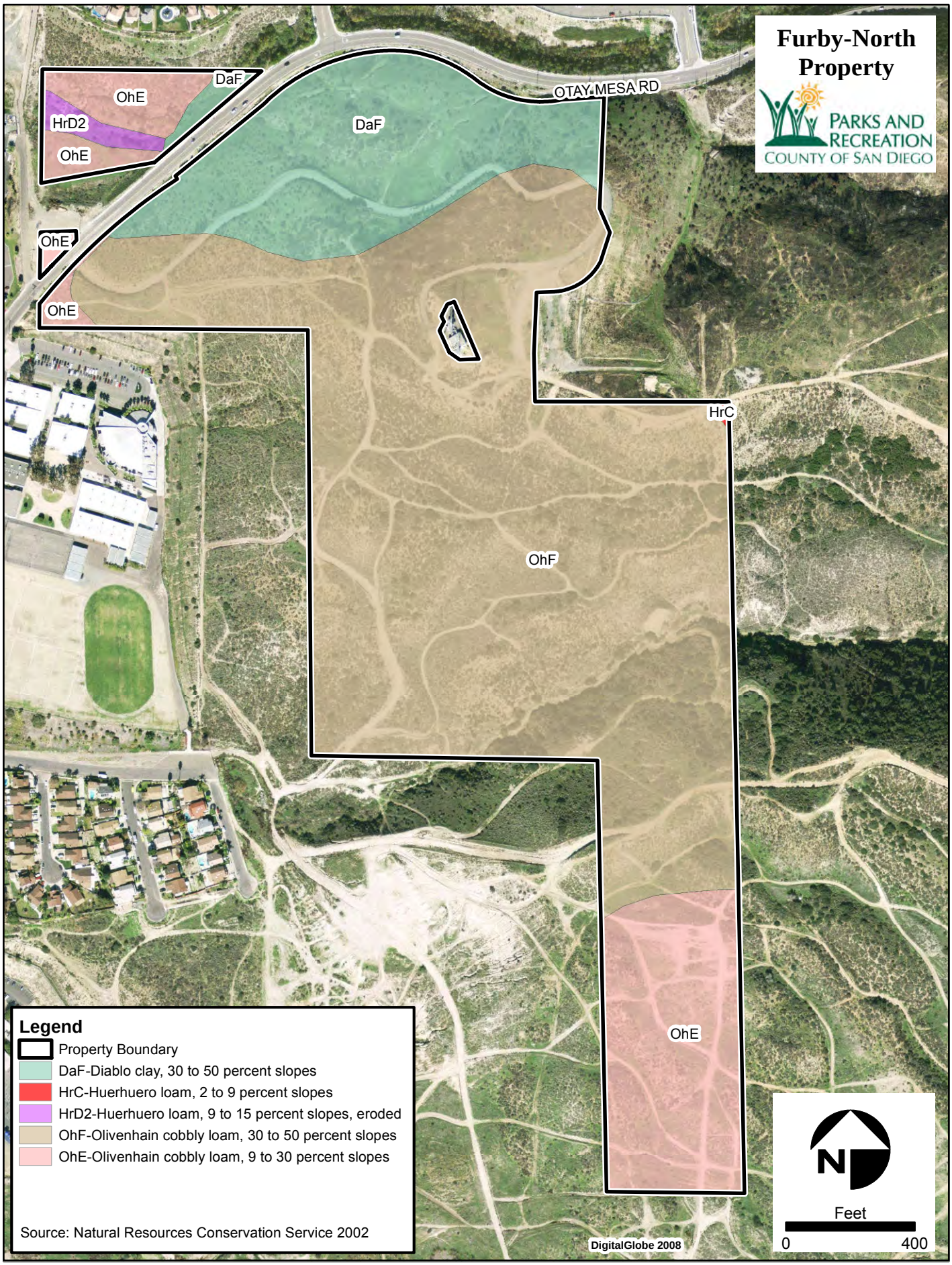
Soils are found on complex undulating, rolling to steep uplands with slopes of 5 to 50 percent at elevations of 25 to 3,000 feet. These soils are well drained with slow runoff when soil is dry and medium to rapid runoff when soils are wet. Soil permeability is slow (USDA Soil Survey 1973).

Huerhuero Series

Soils developed on gently sloping coastal plains and are formed from sandy marine sediments. Soils are considered severely erodible.

Olivenhain Series

Soils are gently sloping to strongly sloping and are on dissected marine terraces at elevations of 100 to 600 feet. Soils are well-drained with slow to medium runoff and very slow permeability (USDA Soil Survey 1973). This soil series was formed from cobbly alluvium cut from an Eocene alluvial fan by rising Pleistocene sea levels and deposited on wave-cut terraces; exposed in late Pleistocene.



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Soils

Figure 5

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2.3.2 Climate

Cismontane portions of San Diego County and southern California largely have a Mediterranean climate. This is characterized by mild winters with modest precipitation and arid, warm summers, according to the Koppen Classification System (Pryde 2004). The Property is located approximately five (5) miles inland of the coast but is still heavily influenced by the coastal climate and subsequent marine layer. Climate is generally stable characterized by warm summers and mild winters with the temperatures rarely dropping below freezing. The Property is located within the Sonoran Desert region and as such has relatively low precipitation. Monthly mean temperature data recorded at a weather station at Brown Field Airport from 1 January 2010 to 30 December 2010 are presented in Table 1. Precipitation data are presented in Table 2 (Weather Underground 2010).

Table 1. Monthly Mean High and Low Temperatures (2010) for Otay Mesa, California

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average High Temperature (°F)	67	64	67	67	69	71	74	77	77	71	69	65
Average Low Temperature (°F)	46	46	48	49	42	56	60	59	58	56	48	46

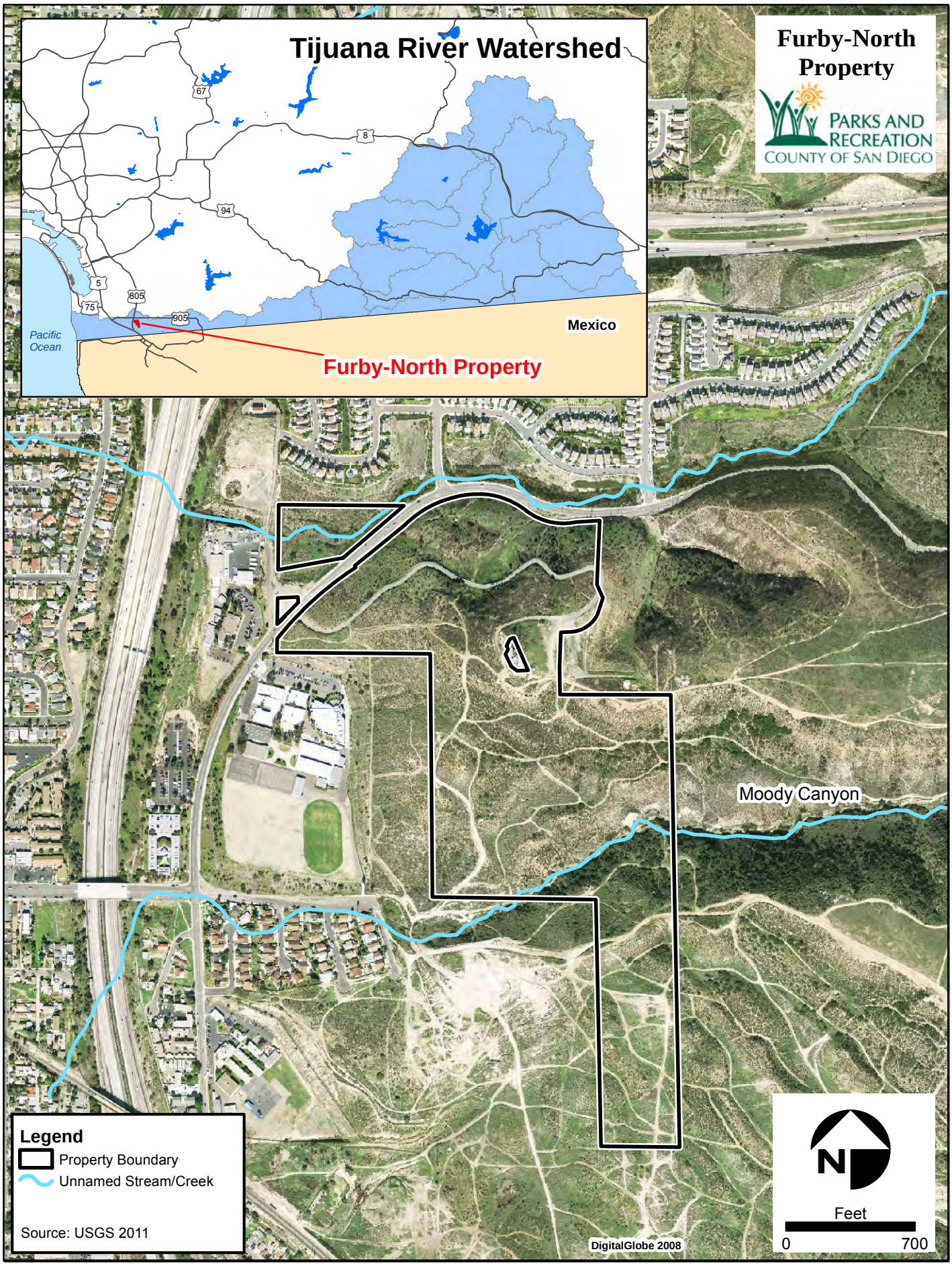
Table 2. Monthly Mean Precipitation in inches (2010) for Otay Mesa California

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Total Precipitation (in.)	0.12	0.10	0.02	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13

The climate data shown in Tables 1 and 2 highlight the generally arid precipitation regime characteristic of the region. Precipitation in minimal amounts can occasionally occur in summer from tropical weather systems but the majority comes from winter storms originating in the middle to high latitudes of the North Pacific Ocean.

2.3.3 Hydrology

Hydrology within the Property is typical for the region's semiarid climate. While the Property is located just south of the Otay River Valley, it is wholly within the Tijuana River Valley watershed. Very few hydrologic features exist on-site. A dry streambed associated with Moody Canyon runs east to west through the southern portion of the Property, and an unnamed dry drainage runs east to west through the northernmost fragment of the property (Figure 6). Outside of these dry wash features, there is one vernal pool present in and another just outside the northern Property boundary. Other vernal pool complexes exist on mesas adjacent to the northeast portion of the Property.



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Hydrology

Figure 6

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2.3.4 Fire History

No historic fires have been identified on the Property (Cal Fire 2011); however, judging from evidence of charred vegetation, the north-facing hillside on the north end of the Property (bordering Otay Mesa Road) appears to have been burned at least once between 3 and 5 years ago. The lemonadeberry and laurel sumac shrubs mapped during vegetation surveys show signs of charring and resprout. In addition, the fields of non-native grasses have remnants of coastal sage scrub, lending evidence to a fire-induced type conversion in recent years. Western dichondria (*Dichondria occidentalis*), a known fire-follower, was also mapped here.

While the Otay Mesa area is prone to brush fires mainly caused by anthropogenic factors, and signs of recent small brush fires are present, no recent reports of any fires on the Property could be located. The Property is located within the jurisdiction of the City of San Diego's Fire Department. The Property has been classified by the City's Fire Department as being located in a Very High Fire Severity Zone.

The much larger Otay Fire, which burned during the firestorms of 2003, stopped just east of Lower Otay Lake as did the Harris Fire of 2007. A smaller brush fire behind San Ysidro High School, approximately one mile northeast of the Property boundaries, was quickly contained and likely did not reach the Property.

2.4 Land Use

2.4.1 On-Site Land Use

The Property is currently not open to the public. The Property contains an easement maintained by the City of San Diego for access to and maintenance of a communications tower located in the northern area of the Property. Although the Property is not open to the public, the Property contains an unofficial network of trails and dirt roads formed over the years from adjacent residents walking across the Property and off-road vehicle use. Gated access to the Property is located on Otay Mesa Road near the intersection of Otay Mesa Place on the north boundary of the Property.

2.4.2 Adjacent Properties

Open space is adjacent to the northern and western boundaries of the Property with urban residential development beyond the open space to the north and San Ysidro middle school located beyond the open space to the west. Open space is also adjacent to the southern and eastern boundaries of the Property owned by private entities, City of San Diego and Caltrans. Caltrans acquired two parcels within the privately owned open space to the east of the Property for mitigation purposes. In addition, the San Ysidro School District performed vernal pool restoration on City of San Diego open space property east of the property owned by SANDAG. All

surrounding properties are within the City of San Diego's MSCP Subarea Plan and portions are within the MHPA (Figure 3).

2.4.3 Easements, Rights or Restrictive Covenants

Multiple easements are present within the Property and are described below.

City of San Diego

The City of San Diego retains an easement for an access road that traverses the Property beginning at Otay Mesa Road traveling east and southeast to the City of San Diego in-holding in the central area of the Property.

The Draft Otay Mesa Community Plan Update Modified Scenario 3B dated January 13, 2010 shows an extension of Beyer Boulevard bisecting the southern portion of the Property. The Draft Otay Mesa Community Plan Update Modified Scenario 3B has not been approved by the City of San Diego and the County has not been approached regarding this proposed road extension.

San Diego Gas & Electric

San Diego Gas & Electric (SDGE) retains a distribution easement for overhead power lines that traverse the Property beginning at the City of San Diego in-holding in the central area traveling east, going off-site and then continuing south through the eastern portion of the Property. A figure showing the locations of the SDGE easements are on file at the DPR offices. SDGE conducts operation and maintenance activities for their facilities consistent with the SDGE Subregional Natural Community Conservation Planning (NCCP) (SDGE 1995). The SDGE NCCP was approved by the wildlife agencies and is compatible with this RMP.

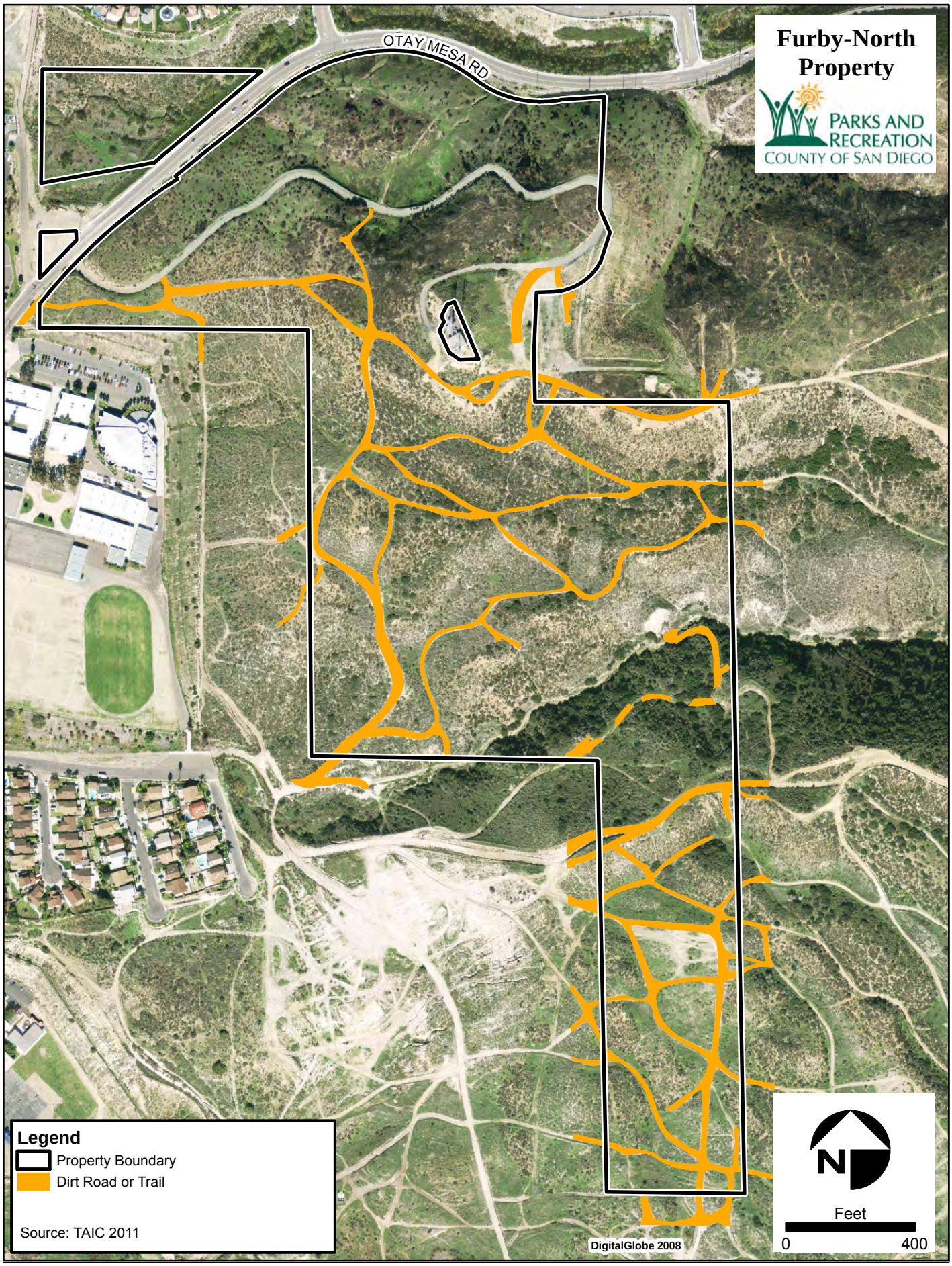
San Diego Association of Governments

An access easement across the northern portion of the Property has been requested by SANDAG to obtain access to their mitigation property to the east.

2.5 Trails

There are multiple unauthorized trails that exist on the Property (Figure 7). The existence of an access road and easement across the Property for the City of San Diego likely encourages the trespass that has contributed to unauthorized trail creation. The Property is surrounded on all sides by heavy urbanization, and local residents frequently walk their dogs and hike through using the easement road or unauthorized trails. Off-road vehicle use, specifically motocross bikes, is also a problem within the Property and especially just off-site to the southeast on adjacent properties. Other unauthorized trails on-site seem to have been formed by migrants and include evidence of migrant camps.

DPR will be utilizing the Property as mitigation for public and private projects in accordance with the County of San Diego Board Policy I-138, so the Property will not be opened for public use.



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Existing Dirt Roads and Trails

Figure 7

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3.0 BIOLOGICAL RESOURCES

Baseline biological surveys of the Property were conducted by TAIC between April and July 2011. The results of these surveys can be found in the biological resources report entitled *Biological Diversity Baseline Report for the Furby-North Property*, dated December 2011, and attached as Appendix B. The results of the baseline surveys were used in the preparation of this RMP.

The surveys documented 11 plant alliances, associations, or semi-natural stands and 205 species within the Preserve. The surveys detected 115 plant species, 48 bird species, 23 mammal species (four bats, 15 small mammals, and four medium and large mammals), nine herptiles (one amphibian and eight reptiles), and 10 invertebrate species. Thirty special-status species were detected during baseline surveys, of which seven are MSCP-covered species (six wildlife species and one plant).

3.1 Vegetation Communities/Habitat

The Property consists of eleven plant alliances, associations, or semi-natural stands (Table 3; Figure 8). These vegetation community types are described below and organized as they are in the classification key of the Vegetation Classification Manual (VCM; AECOM et al. 2011) by functional group (e.g., drought deciduous shrublands, riparian shrublands, and upland herbaceous vegetation). Currently the VCM classification system does not include vernal pools, which occur on the Property. Vernal pools are expected to be incorporated in the future when this habitat has been characterized at the statewide level (AECOM et al. 2011). The VCM does not include unvegetated habitat (e.g. disturbed habitat, urban/developed, and non-vegetated channel); therefore, unvegetated habitat is described using the Oberbauer-modified Holland classification system (Oberbauer et al. 2008, Holland 1986).

Until the VCM was finalized in 2011, MSCP preserve lands were generally mapped using the Holland classification system. To ensure consistency with previous mapping efforts, the Property map data layer was cross-walked to the Holland system pursuant to the VCM (AECOM et al. 2011; Table 3). The vegetation community descriptions below include a discussion of the Holland classification cross-walk. Holland community types not included in the VCM (e.g., vernal pools and unvegetated habitats) are described at the end of this section.

Table 3. Vegetation Communities – Vegetation Classification Manual

VCM Code	VCM Alliance/Association	VCM Common Name	Holland Code	Holland Classification	Acres
Drought Deciduous Shrublands					
4.6.1	*Artemisia californica* Association	California Sagebrush Association	32500	Diegan Coastal Sage Scrub	0.41
4.7.2	*Artemisia californica-Eriogonum fasciculatum - Opuntia littoralis/Dudleya (edulis)* Association	California Sagebrush-Buckwheat-Succulent Association	32400	Maritime Succulent Scrub	0.56
4.22.1	*Encelia californica-Artemisia californica* Association	California Encelia-California Sagebrush Association	32500	Diegan Coastal Sage Scrub	6.17
4.35	*Malosma laurina* Alliance	Laurel Sumac Alliance	32000	Coastal Scrub	0.43
4.42.1	*Rhus integrifolia* Association	Lemonadeberry Association	32500	Diegan Coastal Sage Scrub	3.08
4.45.1	*Simmondsia chinensis-Bahiopsis laciniata Association*	Jojoba-San Diego Sunflower Association	32400	Maritime Succulent Scrub	39.74
	Total Drought Deciduous Shrublands				***50.40***
Riparian Shrublands					
4.9.1	*Artemisia dracunculus* Association	Tarragon Association	63000	Riparian Scrub	1.62
	Total Riparian Shrublands				***1.62***
Upland Herbaceous Vegetation					
5.5	*Avena (barbata, fatua)* Semi-Natural Stands	Wild Oat Semi-Natural Stand	42200	Non-Native Grassland	2.40
5.9.1	*Bromus rubens* Semi-Natural Stand	Red Brome Semi-Natural Stand	42200	Non-Native Grassland	0.16
5.16.1	*Glebionis coronaria* Semi-Natural Stands	Garland Chrysanthemum Stand	11300	Disturbed Habitat (Not Trail or Road)	9.77
5.21	Mediterranean California Naturalized Annual and Perennial Grassland Semi-Natural Stands.	Non-native Grassland Semi-Natural Stand	42200	Non-Native Grassland	5.20
	Total Upland Herbaceous Vegetation				***17.52***
Other Vegetation Communities					
N/A	N/A	N/A	44000	Vernal Pool	0.001
	Total Other Vegetation Communities				***0.001***
Unvegetated[1]					
N/A	N/A	N/A	11300	Disturbed Habitat (Trail or Road)	6.03
N/A	N/A	N/A	11300	Disturbed Habitat (Not Trail or Road)	1.06
N/A	N/A	N/A	12000	Urban/Developed	1.54
N/A	N/A	N/A	64200	Non-Vegetated Channel	0.36
	Total Unvegetated				***8.99***
		TOTAL LAND COVER			**78.53**

Drought Deciduous Shrublands

Artemisia californica (California Sagebrush) Association 4.6.1

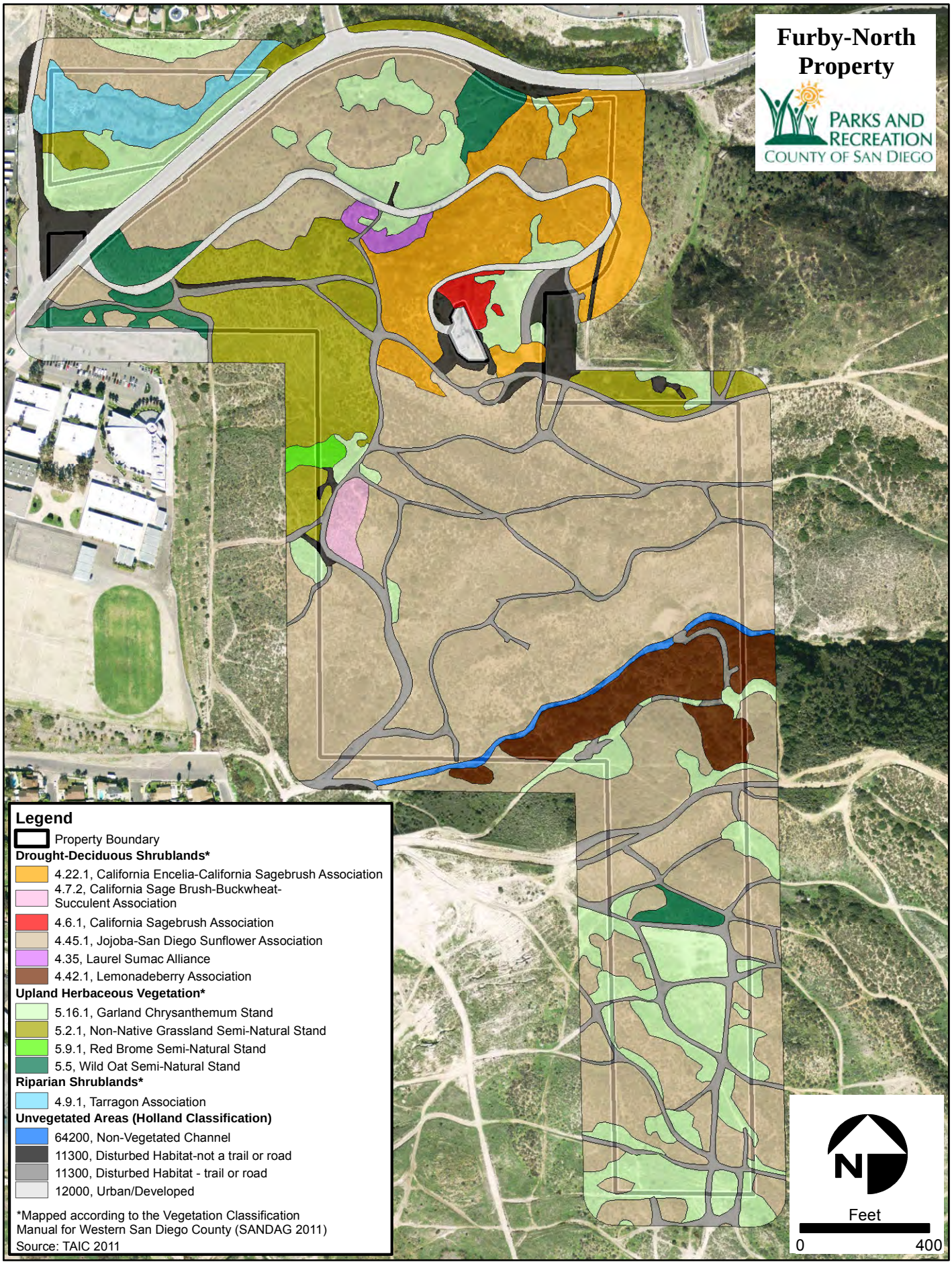
This open shrub community is dominated by a single species, California sagebrush, and has a high diversity of other shrub species, including fourwing saltbush (*Atriplex canescens*), lemonadeberry (*Rhus integrifolia*), California encelia (*Encelia californica*), laurel sumac (*Malsoma laurina*), California buckwheat (*Eriogonum fasciculatum*), coyote bush (*Baccharis pilularis*), broom baccharis (*Baccharis sarothroides*), coast goldenbush (*Isocoma menziesii*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and bush mallow (*Malacothamnus fasciculatus*). California buckwheat (*Eriogonum fasciculatum*), if present, consists of less than five percent cover. This vegetation community may occur as an early transitional stage during fire recovery, or as a mature, stable community. The Holland classification associated with this vegetation community is *Diegan coastal sage scrub*.

A total of 0.41 acre of California sagebrush association occurs on the Property adjacent to the in-holding on the northwest side. This area consists of approximately 80 to 90 percent relative cover of California sagebrush. Other species include California encelia, deerweed, and scattered non-native species.

Artemisia californica-Eriogonum fasciculatum -Opuntia littoralis/Dudleya (edulis) (California Sagebrush-Buckwheat-Succulent) Association 4.7.2

In this open shrub community, California sagebrush and California buckwheat are co-dominant. Other common shrub species may include lemonadeberry, San Diego sunflower (*Bahiopsis laciniata*), California box- thorn (*Lycium californicum*), California encelia, coast spice bush (*Cneoridium dumosum*), cliff spurge (*Euphorbia misera*), jojoba (*Simmondsia chinensis*), black sage, and white sage. The well-developed understory may include dudleya species (*Dudleya* spp.), cactus species (*Cylindropuntia* spp., *Opuntia* spp., *Ferocactus viridescens*), granny's hairnet (*Pterostegia drymarioides*), small-flower soap-plant (*Chlorogalum parviflorum*), giant stipa (*Achnatherum coronatum*), ashy spike-moss (*Selaginella cinerascens*), and coastal wishbone plant (*Mirabilis laevis*). To meet the criteria for this association, (a) at least two succulent species must be present or the total cover of succulent species must account for at least five percent; and (b) the combined cover of the co-dominant species, sages, and succulent species must account for more shrub cover than any other single shrub species. This association generally occurs on south-facing slopes with sandy-loam soils, although other soils may also be present. The Holland classification associated with this vegetation community is *maritime succulent scrub*.

A total of 0.56 acre of this association occurs on a west-facing slope of a small knoll on the west central portion of the Property. California sagebrush is the dominant species (40 percent relative cover) in this area, and California buckwheat is



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Vegetation Communities - Vegetation Classification Manual for Western San Diego County*

Figure 8

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Date: 10/10/2011

subdominant, accounting for approximately 10 to 15 percent cover. In addition, less than five percent cover of each of the following species also occurs: jojoba, cliff spurge, San Diego bur sage (*Ambrosia chenopodiifolia*), San Diego sunflower, needlegrass (*Nassella* sp.), San Diego barrel cactus, snake cholla (*Cylindropunita californica* var. *californica* [*Opuntia parryi* var. *serpentina]*), and fishhook cactus (*Mammillaria dioica*).

Encelia californica-Artemisia californica (California Encelia-California Sagebrush) Association 4.22.1

This is an open shrub community co-dominated by California encelia and California sagebrush. Subdominant shrubs species may include coast goldenbush, California desert thorn, California buckwheat, white sage, black sage, lemonadeberry, bladderpod (*Peritima [Isomeris] arborea*), coast cholla (*Cylindropuntia prolifera*), and laurel sumac. Subdominant shrub cover is generally sparse. This association generally occurs on south-facing slopes with sandy loam or clay loam soils, fairly close to the coast. The Holland classification associated with this vegetation community is *Diegan coastal sage scrub*.

A total of 6.17 acres of this association occurs in the northeastern portion of the Property. The vegetation in this area is highly disturbed from past grading and fire and is in the process of recovery. California encelia, California sagebrush, and California buckwheat are the dominant shrub species. Other shrub species in this area include San Diego bur sage, deerweed, and jojoba. Trace amounts of other native species include bladderpod, coyote bush, western dichondra (*Dichondra occidentalis*), lemonadeberry, needlegrass, and cactus species, including San Diego barrel cactus, fishhook cactus, and snake cholla. Herbaceous species consist mostly of non-native species such as garland chrysanthemum, filaree (*Erodium* spp.), red brome, wild oat.

Malosma laurina (Laurel Sumac) Alliance 4.35

This alliance is dominated by laurel sumac. Subdominant shrubs may include California sagebrush, ceanothus species (*Ceanothus* spp.), coast monkey flower (*Mimulus aurantiacus*), California encelia, California buckwheat, toyon (*Heteromeles arbutifolia*), yucca (*Hesperoyucca whipplei*), bush penstemon (*Keckiella antirrhinoides*), holly-leaf redberry (*Rhamnus ilicifolia*), lemonadeberry, sugarbush (*Rhus ovata*), sages, Parry's tetracoccus (*Tetracoccus dioicus*), and/or poison oak (*Toxicodendron diversilobum*). Laurel sumac is highly successful at resprouting after a fire, and therefore, this alliance is fairly common in post-burn areas. A single association under this alliance, the laurel sumac-deer weed association, was identified by the Vegetation Classification Manual; however, deer weed was not present in this community on site, and therefore, this community was identified only to the alliance level. The Holland classification associated with this vegetation community is *coastal scrub*.

The laurel sumac association occurs in a small area (0.43 acre) in the northern central portion of the Property. Laurel sumac is the dominant shrub and California sagebrush is subdominant. Trace amounts of blue elderberry and lemonadeberry are also present. The undergrowth consists mostly of mixed non-native grasses and forbs.

Rhus integrifolia (Lemonadeberry) Association 4.42.1

Lemonadeberry is the dominant species in this association, often forming a continuous canopy cover. To meet the criteria for this association, lemonadeberry must account for at least 50 percent relative cover in the shrub canopy or it must be present with greater than twice the cover of any other shrub species. Subdominant shrub species may include chamise (*Adenostoma fasciculatum*), California sagebrush, monkey flower, California encelia, California buckwheat, toyon, laurel sumac, spiny redberry (*Rhamnus crocea*), black sage, and mission manzanita (*Xylococcus bicolor*). Because lemonadeberry tends to create dense shade and litter build-up, the understory is often absent or under-developed, and has low species diversity. The Holland classification associated with this vegetation community is *Diegan coastal sage scrub*.

A total of 3.08 acres of Lemonadeberry association occurs in the central portion of the Property on a steep, north-facing slope. Lemonadeberry accounts for approximately 50 percent relative shrub cover, and California sagebrush is subdominant at approximately 20 percent cover. Needlegrass is also present, accounting for approximately one to two percent cover. The remaining understory consists mainly of non-native grasses and forbs.

Simmondsia chinensis-Bahiopsis laciniata (Jojoba-San Diego Sunflower) Association 4.45

Unlike the diagnostic species for many other plant associations, jojoba has to account for only five percent or more relative cover to be classified in the jojoba-San Diego sunflower association. If San Diego sunflower occurs with at least five percent relative cover in the shrub canopy, joboba can be present in any amount. Additional species often found in this association include California sagebrush, coast cholla, California buckwheat, snakeweed (*Gutierrezia sarothrae*), deerweed, sugarbush, black sage, and yucca. The Holland classification associated with this vegetation community is *maritime succulent scrub*.

The jojoba-San Diego sunflower association is the most prevalent vegetation type on the Property, covering 39.74 acres. Because this association is characterized by as little as five percent cover of jojoba, the overall floristic composition of this vegetation association is quite variable throughout the Property. The relative cover of jojoba varies from 5 to 70 percent, and cover of San Diego sunflower ranges from 0 to 10 percent. Other native species present in this association include California sagebrush, San Diego bur sage, cliff spurge, California encelia, California

buckwheat, bush mallow, needlegrass, and various species of cactus (coast cholla, fishhook cactus, San Diego barrel cactus, and snake cholla). The understory was composed mostly of non-native grasses, Malta star thistle, chrysanthemum, and short-pod mustard.

Overall shrub cover in this association varies from approximately 5 to over 80 percent on site, depending on the level of disturbance. Highly disturbed areas, such as the north-facing slope adjacent to the south side of Otay Mesa Road, consist of very high cover of non-native grasses and forbs with as little as 5 to 10 percent native shrub cover. Less disturbed areas, such as the central portion of the Property, consist of a much lower cover of non-native species and higher cover of native shrubs. The dominance of native shrubs in these areas is highly variable, including areas that consist of (1) up to 60 percent cover of San Diego bur sage, (2) up to 70 percent cover of jojoba, (3) up to 65 percent cover of California sagebrush, or (4) up to 50 percent or more of coast cholla. Due to the high level of variability in this vegetation type, definable patches (e.g., subareas of this association on the Property with a fairly distinct species composition) were characterized and described individually, and included on the large fold-out map located in the back of this report. This characterization should help the land manager better assess the biological resources of this Property. Subarea descriptions for this and other associations or alliances are also included in Appendix B.

Riparian Shrublands

Artemisia dracunculus (Tarragon) Association 4.9.1

In this association, tarragon is the dominant or co-dominant species, accounting for at least 50 percent relative shrub cover, and generally occurs in riparian terraces or moist slopes adjacent to seeps in sandy soils. Other species, which tend to occur in transitional areas between wetlands and uplands, may include broom baccharis, blue elderberry (*Sambucus nigra* ssp. *caerulea*), California sagebrush, California encelia, California buckwheat, California croton (*Croton californicus*), and western ragweed (*Ambrosia psilostachya*). Stands of tarragon tend to be small (e.g., less than 2.5 acres). The Holland classification associated with this vegetation community is *riparian scrub*.

A total of 1.62 acres of tarragon association occurs within a small, isolated patch of habitat at the northernmost portion of the Property, north of Otay Mesa Road. This vegetation community occurs along a drainage that runs roughly east to west. Edge effects from surrounding development and past ground disturbance are evident, as shown by heavy infestation by invasive species such as poison hemlock, non-native grasses, garland chrysanthemum, and castor bean (*Ricinus communis*). Native shrubs are dominated by tarragon. Other native species include broom baccharis, lemonadeberry, blue elderberry, and climbing milkweed (*Sarcostemma cynanchoides* ssp. *hartwegii*)).

Upland Herbaceous Vegetation

Avena (*barbata, fatua*) (Wild Oat) Semi-Natural Stand 5.5

This vegetation community is strongly dominated by wild oat species, which commonly occur in disturbed openings within native shrub or woodland vegetation communities. Other co-occuring species may include other non-native brome grasses (*Bromus* spp.), or native herbs such as clarkias (*Clarkia* spp.), bedstraws (*Galium* spp.), lupins (*Lupinus* spp.), popcorn flowers (*Plagiobothrys* spp.), and clovers (*Trifolium* spp.). Structurally, wild oat stands are tall and thick, generally resulting in a large amount of thatch. The Holland classification associated with this vegetation community is *non-native grassland*. A total of 2.4 acres of wild oat semi-natural stand occurs in small isolated patches in the northern and southern portions of the Property. Wild oat species also occur throughout the Property mixed in with other invasive species.

Bromus rubens (Red Brome) Semi-Natural Stand 5.9.1

This vegetation community is strongly dominated by red brome, a highly invasive grass species. Other non-native species may include filarees, brome grasses, Malta star thistle (*Centaurea melitensis*), short-pod mustard (*Hirschfeldia incana*), common catchfly (*Silene gallica*), and smooth cat's ear (*Hypochaeris glabra*). This association occurs in dry, disturbed areas on poor soils. The Holland classification associated with this vegetation community is *non-native grassland*. A total of 0.16 acre of red brome semi-natural stand occurs in a single patch on the central western boundary of the Property. Red brome grasses also occur throughout the Property mixed in with other invasive species.

Glebionis coronaria (Garland Chrysanthemum) Semi-Natural Stand 5.16.1

Garland chrysanthemum is the dominant or co-dominant species in this semi-natural stand, accounting for at least 30 percent relative cover. It often occurs as a monoculture, choking out other species, including other invasive species. Other herbaceous species that may occur in this community include iceplant (*Mesembryanthemum* spp.), wild radish (*Raphanus sativus*), brome grasses, Russian thistle (*Salsola tragus*), sweetclovers (*Melilotus* spp.), filaree, and Malta star thistle. Pursuant to the Vegetation Classification Manual, the Holland classification associated with this vegetation community is *disturbed habitat*.

The garland chrysanthemum association is the most prevalent (9.77 acres) upland herbaceous community on the Property. The species occurs throughout the Property mixed in among other native and non-native species, but it mostly occurs in monoculture patches among the extensive unauthorized trail system in the south and in disturbed areas in the north.

Mediterranean California Naturalized Annual and Perennial Grassland (Non-native Grassland) Semi-Natural Stand

This non-native grassland semi-natural stand is a broad classification based on the group level, which is the level above alliance. This classification can be used for non-native vegetation communities of mixed species that cannot be keyed out to the level of alliance or association. To meet the criteria for this classification, non-native grasses and forbs must account for greater relative cover than native species, and none of the following non-native species can be dominant or co-dominant: wild oats, brome grasses (*Bromus diandrus*, B. *hordeaceus*, B. *rubens*), purple falsebrom (*Brachypodium distachyon*), rye grasses (*Lolium* spp.), fountain grasses (*Pennisetum* spp.), black mustard (*Brassica nigra*), poison hemlock (*Conium maculatum*), and garland chrysanthemum. The Holland classification associated with this vegetation community is *non-native grassland*. The non-native grassland semi-natural stand occurs in several large patches that are composed of a dense mix of wild oats and brome grasses as well as a variety of invasive non-native broadleaf species, such as Malta start thistle, short-pod mustard, garland chrysanthemum, and filarees (5.20 acres).

Other Vegetation Communities

Vernal Pool (Holland 44000)

Vernal pools are ephemeral ponds or depressions that fill during the rainy season and support a distinctive plant and animal community. The hydrology of this vegetation community experiences seasonal extremes of wet and dry periods. "Vernal pools can be differentiated from other temporary wetlands by the following criteria: (1) the basin is at least partially vegetated during the normal growing season or is unvegetated due to heavy clay or hardpan soils that do not support plant growth; and (2) the basin contains at least one vernal pool indicator species" (Oberbauer et al. 2008). Indicator species include woolly marbles (*Psilocarphus* spp.), toothed downingia (*Downingia cuspidata*), San Diego button celery (*Eryngium aristulatum* var. *parishii*), and fairy shrimp (*Branchinecta* spp. and *Streptocephalus* spp.). One small vernal pool (approximately 0.001 acre) was identified on the Property and a second pool (approximately 0.0007 acre) was located just off the Property boundary (Figure 9). Both are located along the edge of the main unpaved access road just southeast of the in-holding; they appear as the western extension of a vernal pool complex that strings along the mesa tops along Otay Mesa Road. Although the pools were dry at the time of the observation, woolly marbles were distinguishable at both pools. No other plant species were identifiable because they were desiccated at the time of the survey.

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Vernal Pools

Figure 9

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Unvegetated Areas

Disturbed Habitat (Holland Code 11300)

Disturbed habitat is any land on which the native vegetation has been significantly altered by agriculture, construction, or other land-clearing activities, and the species composition and site conditions are not characteristic of the disturbed phase of one of the plant associations within the study region. Such habitat is typically found in vacant lots, roadsides, construction staging areas, or abandoned fields. For the purpose of this report, "disturbed habitat" in Figure 8 is used to classify only areas that are unvegetated. However, the VCM crosswalk to the Holland classification system identifies the garland chrysanthemum association as disturbed habitat in the Holland system. On the Property, disturbed habitat has been further classified into two categories to assist with management: (1) trails/dirt roads, and (2) not trails/dirt roads. Trails and dirt roads account for 6.03 acres and disturbed areas not associated with trails or roads accounts for 1.06 acres.

Urban/Developed (Holland Code 12000)

Urban/Developed areas are found where habitat has been altered by human activities to a state beyond the potential for recovery to a natural state. In general, free standing structures and surrounding areas that are paved, armored, or landscaped are considered developed. On the Property, 1.54 acre of urban/developed land cover occurs as a paved access road from Otay Mesa Road to the in-holding.

Non-vegetated channel or Floodway (Holland Code 64200)

This land cover type consists of a sandy, gravelly, or rocky substrate along the fringe of waterways, flood channels, or streambeds. Non-native species may be present, but generally there is less than ten percent vegetative cover. On the Property, 0.36 acre of non-vegetated channel occurs along a dry streambed in the central portion of the Property.

3.2 Plant Species

3.2.1 Plant Species Present

A total of 115 plant species were documented within the Property during the 2011 baseline surveys. Appendix B provides a complete list of all plant species observed during the surveys.

3.2.2 Rare, Threatened or Endangered Plants Present

A special-status plant species is one (a) listed, or proposed for listing, as threatened or endangered, or otherwise designated as "listed", "candidate", "sensitive" or "species of concern" by federal and/or state agencies; (b) assigned a California Rare Plant Rank (CRPR) by the California Native Plant Society (CNPS); included on the County's Sensitive Plant List (County 2010b); or (d) covered under the City of San Diego MSCP Subarea Plan.

Special-status plant species observed within the Preserve (Figure 10) consist of California box-thorn (*Lycium californicum*), cliff spurge (*Euphorbia misera*), coast barrel cactus (*Ferocactus viridescens*), San Diego bur sage (*Ambrosia chenopodiifolia*), San Diego sunflower (*Bahiopsis* [*Viguiera*] *laciniata*), seaside calandrinia (*Calandrinia maritima*), snake cholla (*Cylindropuntia californica* var. *californica*), south coast salt bush (*Atriplex pacifica*), and western dichondra (*Dichondra occidentalis*).

California box-thorn (*Lycium californicum*)

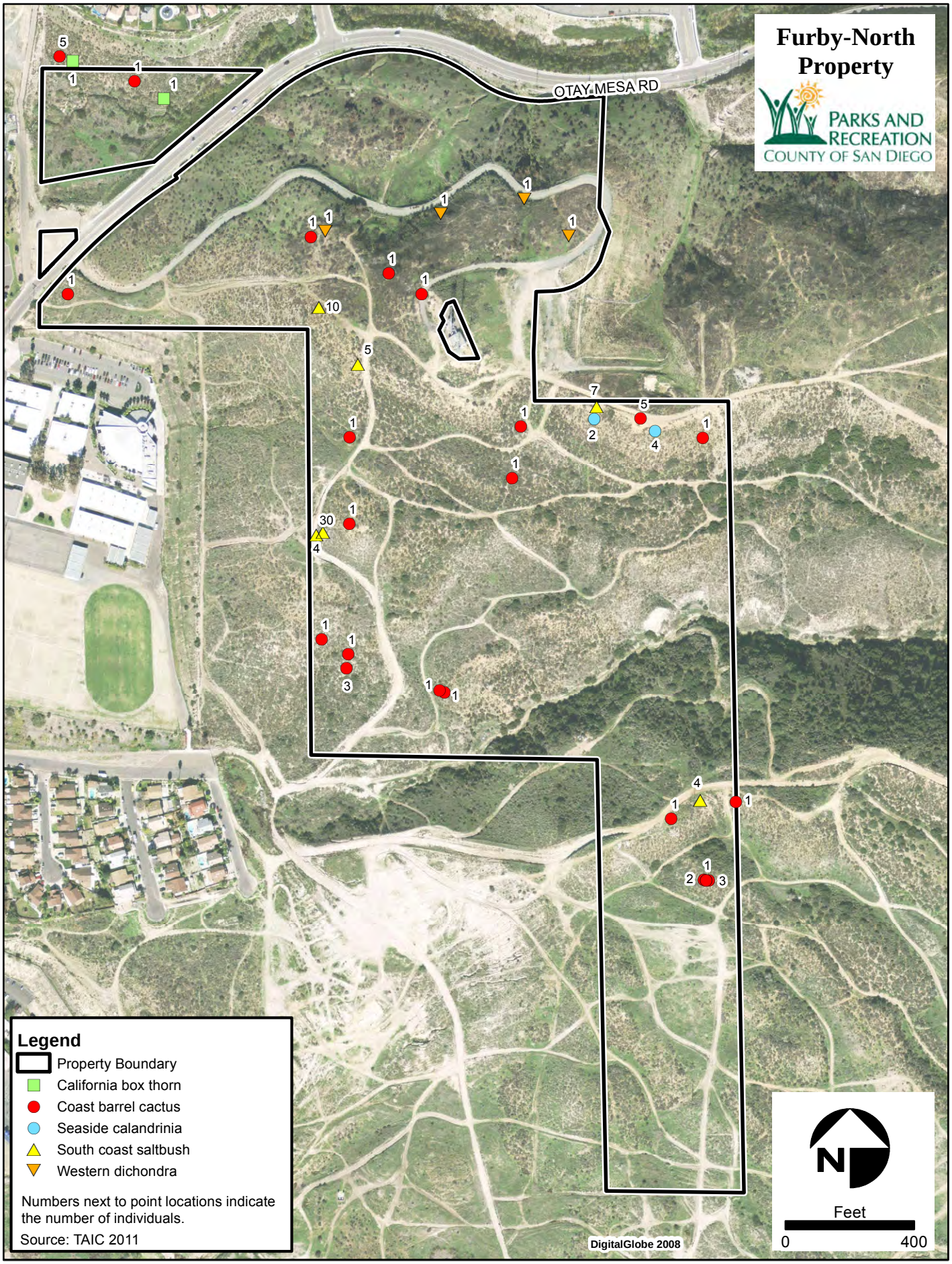
CNPS List 4.2, San Diego County List D

California box-thorn is a shrub that occurs in coastal sage scrub and coastal bluff scrub along the coast of southern California and northern Baja California, Mexico. This shrub is intricately branched with spiny tips. Leaves are very small (3-10 mm) and fleshy. It generally occurs below 150 meters in elevation. Within the Property, several individuals of this species were observed in and adjacent to the disconnected northwestern portion of the Property on a south-facing slope within the jojoba-San-Diego sunflower association. In addition to jojoba and San Diego sunflower, San Diego bur-sage, coast barrel cactus, and saltbush (*Atriplex canescens*) were also present.

Cliff spurge (*Euphorbia misera*)

CNPS List 2.2, San Diego County List B

Cliff spurge is a perennial shrub that occurs in the counties of San Diego, Orange, and Riverside, San Clemente Island, and Baja California, Mexico. This species typically occurs in scrub habitat with cactus near the coast. If damaged, the branches of this species exude a milky latex-like substance. Cliff spurge is fairly widespread on the Property, occurring in many of the drought deciduous associations, such as jojoba-San Diego sunflower and California sagebrush-buckwheat-succulents associations (Figure 10a).



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Sensitive Plant Species

Figure 10

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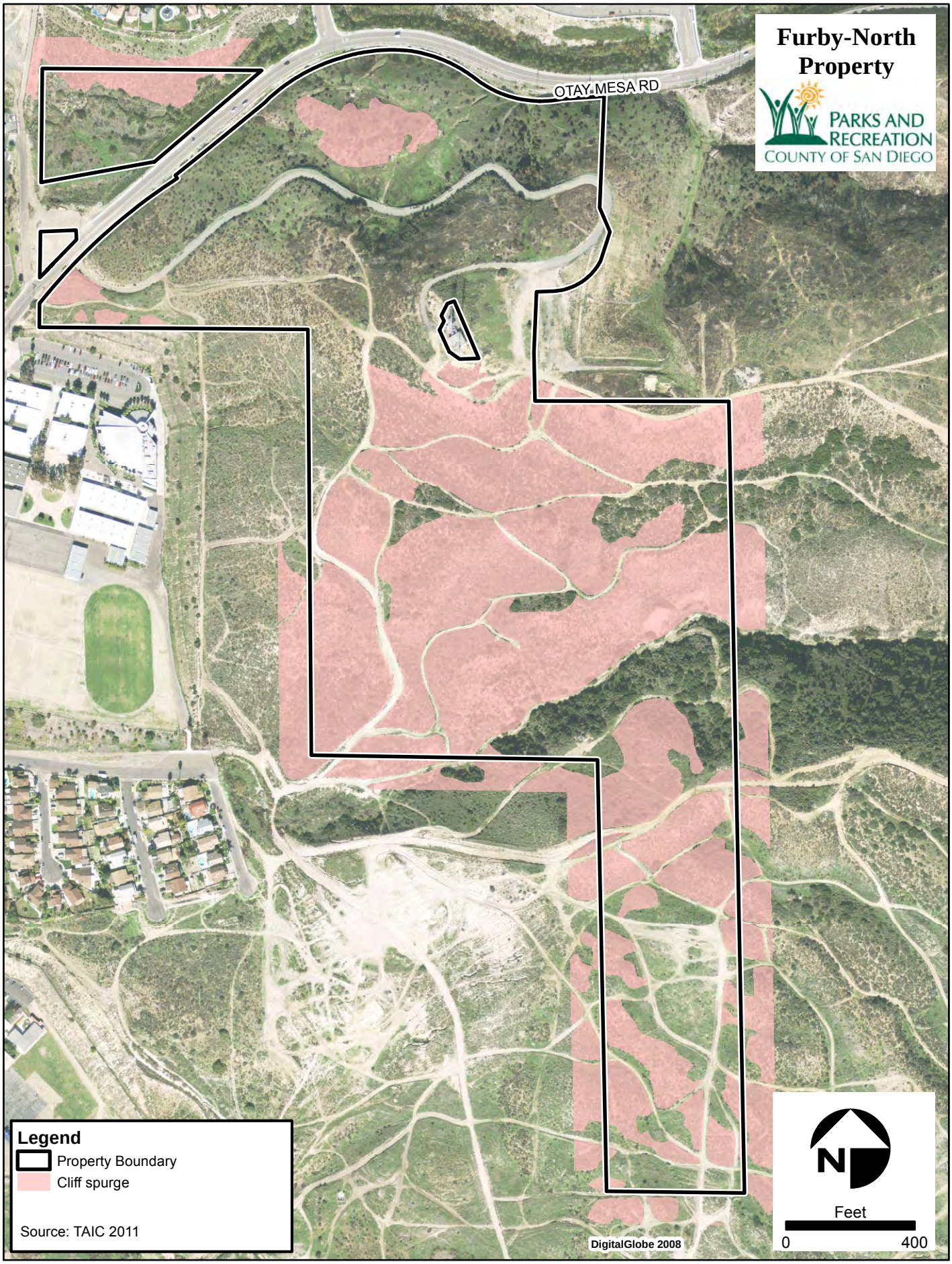

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Sensitive Plant Species
Cliff Spurge

Figure 10a

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Coast barrel cactus (*Ferocactus viridescens*)

CNPS List 2.1, San Diego County List B, City MSCP Subarea Plan Covered Species

Coast barrel cactus occurs in scrub and grassland habitat in coastal San Diego County and Baja California, Mexico. This species is threatened by development, off-road vehicles, and horticultural collecting. On the Property, this species is fairly common, occurring as scattered individuals within the drought-deciduous shrubland associations.

San Diego bur-sage (*Ambrosia chenopodiifolia*)

CNPS List 2.1, San Diego County List B

San Diego bur-sage is a perennial shrub that generally occurs in open coastal scrub habitats in San Diego County and Baja California, Mexico. As its name suggests, this species produces spiny fruits that form into burs when dried. San Diego bur sage is widespread throughout the Property in the drought deciduous shrubland alliances (Figure 10b). In some areas, relative cover of this species is as high as 70%.

San Diego sunflower (*Bahiopsis* [*Viguiera*] *laciniata*)

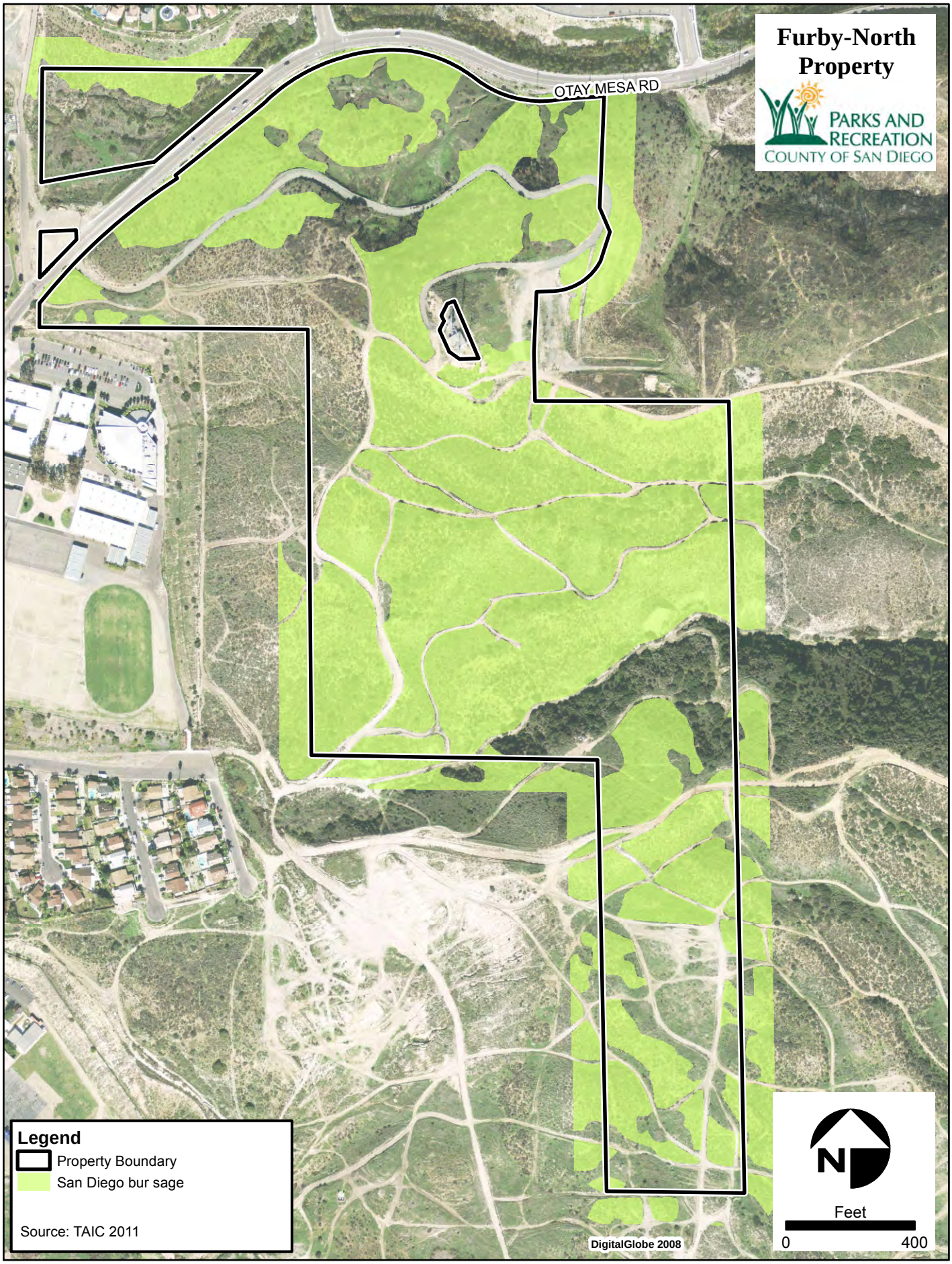
CNPS List 4.2, San Diego County List D

San Diego sunflower occurs throughout southern San Diego County and in Baja California, Mexico. It occurs in coastal sage scrub habitat on a variety of soil types and is often a dominant component of the landscape where it occurs. On the Property, San Diego sunflower occurs as a component of the jojoba-San Diego sunflower association, as well as other drought deciduous shrubland types (Figure 10c). Relative cover of this species ranges from trace to approximately ten percent.

Seaside calandrinia (*Calandrinia maritime*)

CNPS List 4.2, San Diego County List D

Seaside calandrinia is an annual herb with fleshy leaves in the purslane family (Portulacaceae). This species occurs in the counties of Santa Barbara, Ventura, Los Angeles, Orange, and San Diego as well as Baja California, Mexico and various offshore islands. The preferred habitat is sandy bluffs or sandy openings in coastal scrub. Approximately six (6) individuals were observed in two locations during the 2011 surveys in sandstone substrate on the upper slopes adjacent to the south side of the main unpaved access road.



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Sensitive Plant Species
San Diego Bur Sage

Figure 10b

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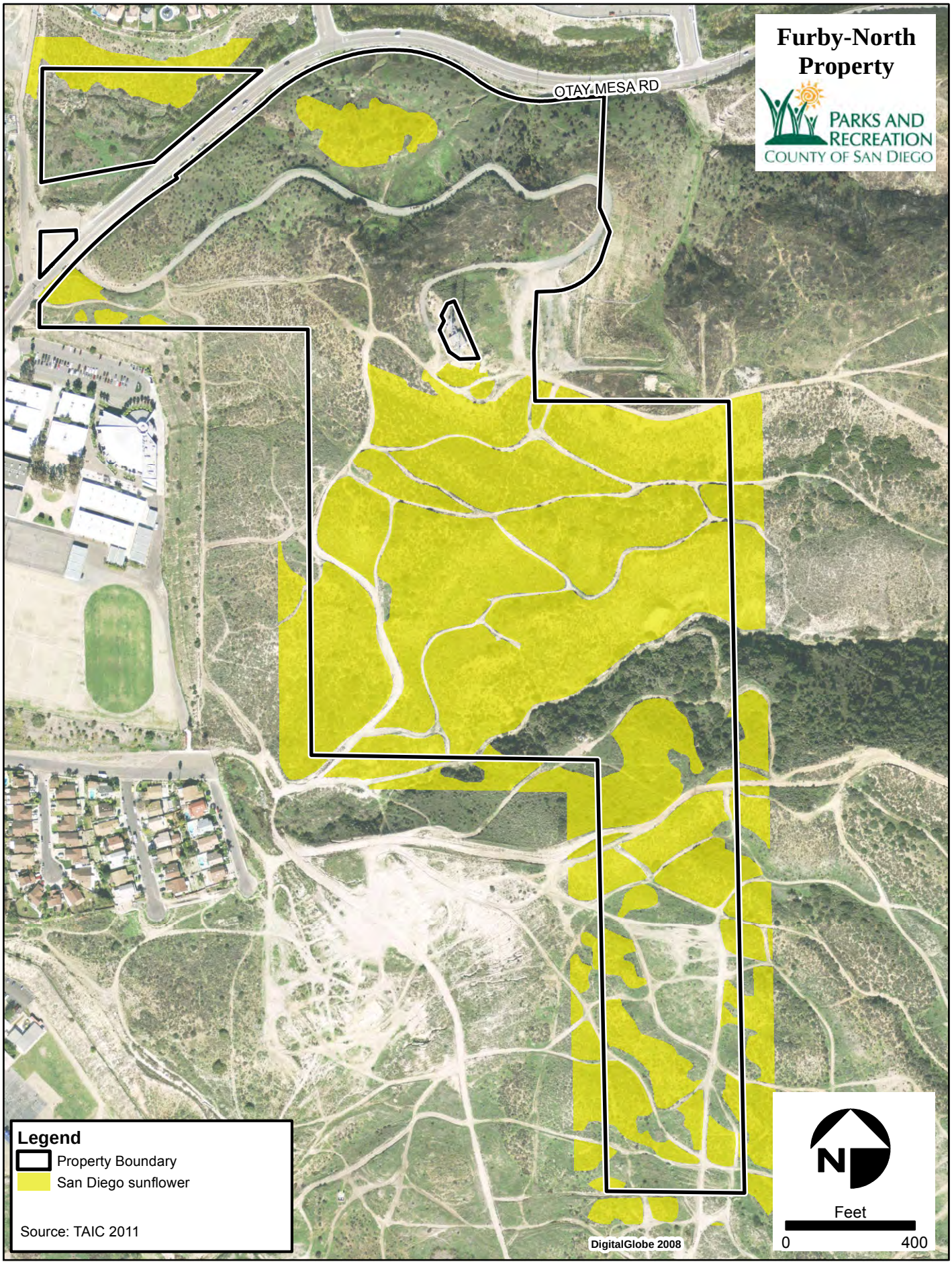

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Sensitive Plant Species
San Diego Sunflower

Figure 10c

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Date: 10/24/2011

Snake cholla (*Cylindropuntia californica* var. *californica* [*Opuntia parryi* var. *serpentine*])

CNPS List 1B.1, San Diego County List A, City MSCP Subarea Plan Covered Species and subject to the Narrow Endemic Policy

Snake cholla occurs in open scrub habitat in San Diego County and Baja California, Mexico, often in association with coast barrel cactus, fishhook cactus and jojoba. This species has a prostrate growth habit, and can be readily propagated from cuttings. The greatest threat to this species is development. Within the Property, this species occurs in patches, some of which are fairly dense (Figure 10d). Co-occurring species on site include coast cholla (*Cylindropuntia prolifera*), fishhook cactus, coast barrel cactus, jojoba, San Diego bur-sage, and cliff spurge.

South coast saltbush (*Atriplex pacifica*)

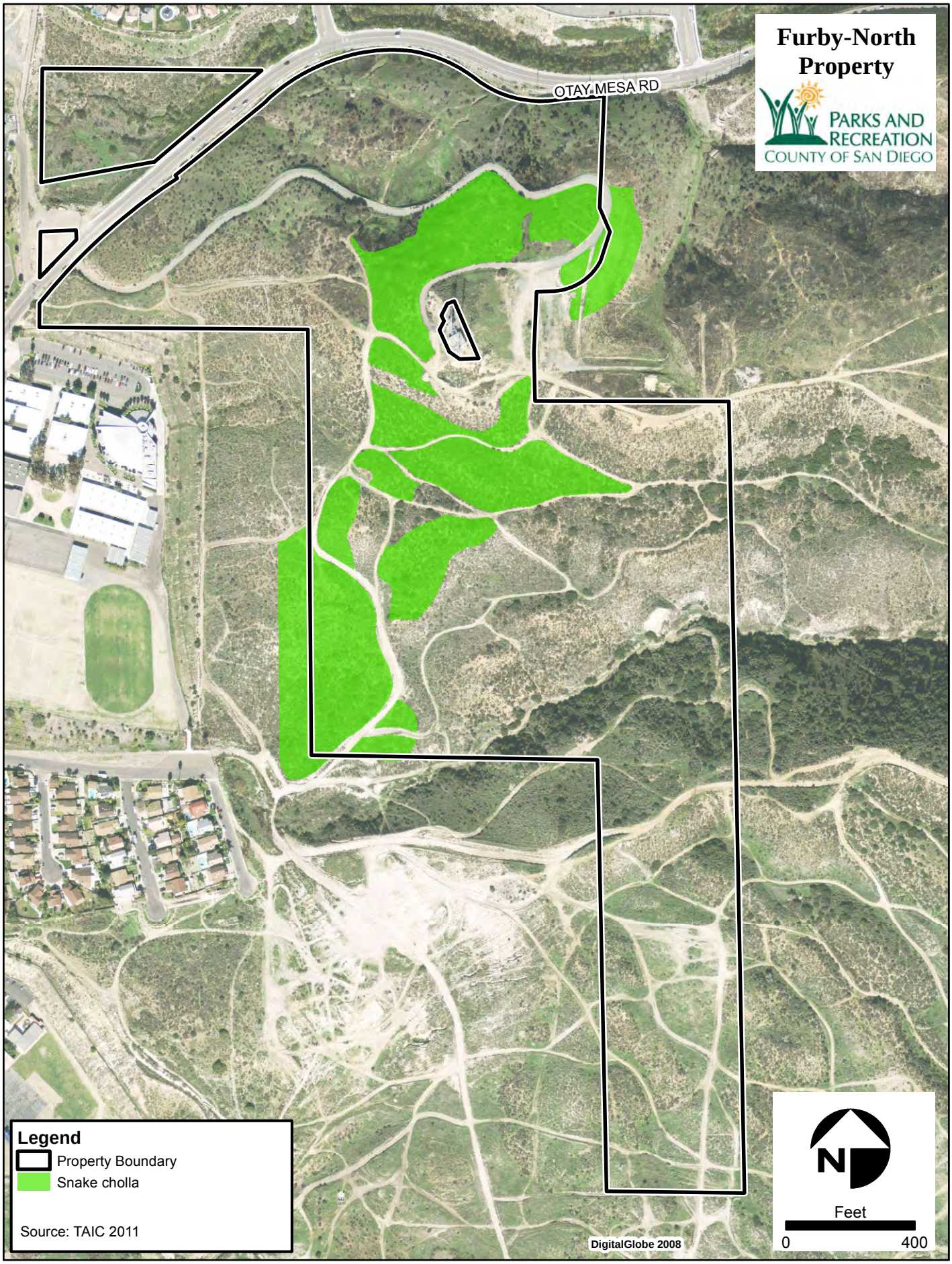
CNPS List 1B.2, San Diego County List A

South coast saltbush, an annual herb, occurs in the counties of San Diego, Orange, Los Angeles, Ventura, and Riverside, as well as Baja California, Mexico and several offshore islands. This species prefers coastal scrub habitats in sandy soils and is often found in disturbed areas. On site, south coast saltbush was observed in many locations along the unpaved roads and disturbed edges.

Western dichondra (*Dichondra occidentalis*)

CNPS List 4.2, San Diego County List D

Western dichondra is a perennial herb that occurs from Santa Barbara County to Baja California, Mexico, in scrub habitat and rocky outcrops within grassland, especially recently burned areas. On the Property this species was observed in several locations in scrub habitat on north-facing slopes south of the east-west paved access road.



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Sensitive Plant Species
Snake Cholla

Figure 10d

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Date: 10/24/2011

3.2.3 Rare, Threatened or Endangered Plants with High Potential to Occur

Five (5) special-status plant species have a high potential to occur within the Property as described below. Additional information on these species can be found in Appendix B.

Golden-spined cereus (*Bergerocactus emoryi*)

CNPS List 2.2, San Diego County List B

Golden-spined cereus is a perennial cactus that tends to occur in scrub habitat (maritime succulent scrub, coastal sage scrub, and coastal bluff scrub) near the coast. This species is often found on ocean bluffs in areas with moist ocean breezes in association with cliff spurge and Shaw's agave (*Agave shawii*). Golden-spined cereus has a high potential to occur on-site within the jojoba-San Diego sunflower association (e.g., maritime succulent scrub or coastal sage scrub).

Otay tarplant (*Deinandra conjugens*)

Federal Threatened, State Endangered, CNPS List 1B.1, San Diego County List A, City MSCP Subarea Plan Covered and subject to the Narrow Endemic Policy

Otay tarplant is an annual herb that prefers clay soils within grassland or open scrub habitat (e.g., coastal sage scrub). This species occurs in southern San Diego County and northern Baja California, Mexico. Otay tarplant has a high potential to occur on-site on clay lenses within coastal sage scrub and grassland habitat.

Variegated dudleya (*Dudleya variegate*)

CNPS List 1B.2, San Diego County List A, City MSCP Subarea Plan Covered and subject to the Narrow Endemic Policy

Variegated dudleya is a tiny perennial succulent that is difficult to see unless it is in bloom (April to June). This species occurs in rocky substrates or clay soils in openings within scrub habitat or in association with vernal pools and mima mound topography. This species has a very high potential to occur; it has been previously recorded on-site in the west central portion (CNDDB 2011) of the Property.

Palmer's goldenbush (*Ericameria palmeri* var. *palmeri*)

CNPS List 1B.1, San Diego County List B, City MSCP Subarea Plan Covered and subject to the Narrow Endemic Policy

Palmer's goldenbush is a woody perennial shrub that occurs in the western portion of San Diego County and northern Baja California, Mexico. The preferred habitat for this species is along moist drainages and mesic scrub habitat. Palmer's goldenbush has

been observed within 2.5 km of the Property. This species has a high potential to occur in the moist areas of drought deciduous shrubland communities on-site.

Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*)

CNPS List 1B.2, San Diego County List A

Robinson's peppergrass is an annual herb in the mustard family (Brassicaceae) that occurs in western southern California and northern Baja California, Mexico. The preferred habitat for this species is dry, exposed openings within coastal sage scrub or chaparral habitat in foothill elevations. This species has a high the potential to occur within the drought deciduous vegetation alliances on the Property. It has been observed within four km of the site.

3.2.4 Non-Native and/or Invasive Plant Species

A total of fifteen (15) moderate to high risk non-native invasive species, as determined by the California Invasive Plant Council (Cal-IPC), were observed on the Property (Table 4, Figure 11). The complete list of non-native plant species observed in the Property is included in Appendix B.

Table 4. Non-native Invasive Plants within the Property

Common Name	Scientific Name	Cal-IPC Rating*
Red brome	*Bromus rubens*	High
Fennel	*Foeniculum vulgare*	High
Australian saltbush	*Atriplex semibaccata*	Moderate
Slender wild oat	*Avena barbata*	Moderate
Wild oat	*Avena fatua*	Moderate
Black mustard	*Brassica nigra*	Moderate
Ripgut brome	*Bromus diandrus*	Moderate
Malta starthistle (tocalote)	*Centaurea melitensis*	Moderate
Garland chrysanthemum	*Glebionis coronarium*	Moderate
Short-pod mustard	*Hirshfeldia incana*	Moderate
Common velvetgrass	*Holcus lanatus*	Moderate
Hare barley	*Hordeum murinum*	Moderate
Rough catsear	*Hypochaeris radicata*	Moderate
Italian ryegrass	*Lolium multiflorum*	Moderate
Rattail fescue	*Vulpia myuros*	Moderate

Inventory Categories (Cal-IPC 2010)

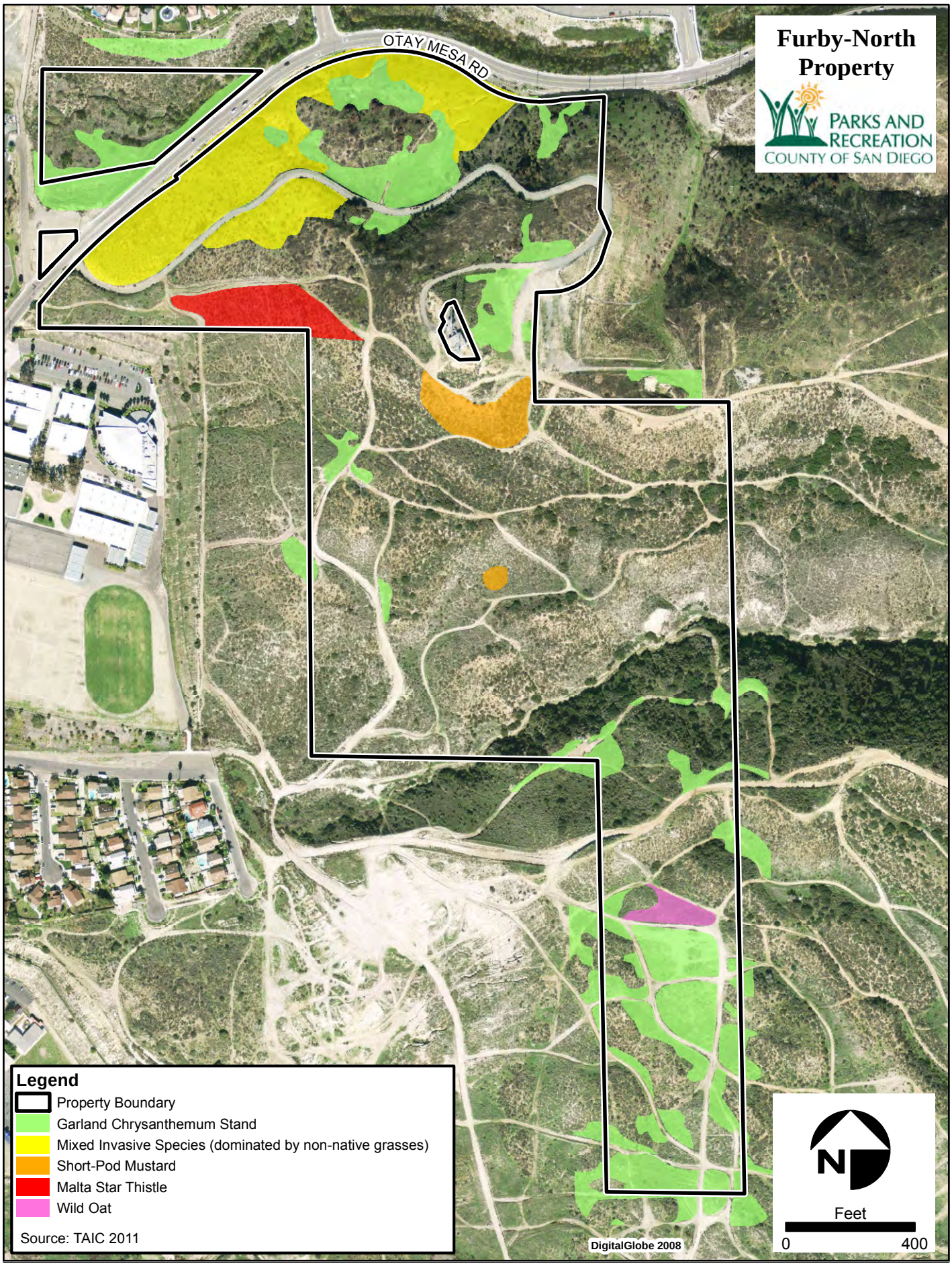
High: Species have severe ecological impacts, are conducive to moderate to high rates of dispersal/establishment, and most are widely spread.

Moderate: Species have substantial and apparent, but generally not severe, ecological impacts, are conducive to moderate to high rates of dispersal, although establishment is generally dependent on ecological disturbance, and distribution may range from limited to widespread.

While the majority of the Property is occupied by relatively undisturbed native habitats, up to 30 percent of the Property is impacted by large and dense stands of exotic and invasive species. Although many invasive plant species are present, there are three herbaceous species in particular that occur in significant and extensive stands on the Property: garland chrysanthemum (*Glebionis coronarium*); Malta starthistle (*Centaurea melitensis*) and short-pod mustard (*Hirshfeldia incana*). In addition, the Property has a high cover of non-native grasses, such as wild oats (*Avena* spp.) and brome grasses (*Bromus* spp.). A monotypic stand of wild oat dominates one small fragment in the southern portion of the Property.

All of these species are considered invasive due to their aggressive expansion and persistent nature. With the exception of red brome (*Bromus rubens*), these species are ranked by the California Invasive Species Council (Cal-IPC) as having a "moderate risk," which is defined as having substantial and apparent – but generally not severe – ecological impacts on physical processes, plant and animal communities, and vegetation structure (Cal-IPC 2006). Red brome, a "high risk" species defined as having severe ecological impacts in physical processes, plant and animal communities and vegetation structure was scattered across the Property. Red brome was found to be generally interspersed with other invasive grasses and forbs on-site, especially in the areas mapped as non-native grassland semi-natural stand or within the jojoba-San Diego sunflower association located in the vicinity of the paved access road. It also occurs in a small, dense stand on the western portion of the Property. Fennel, another high risk species, was also observed on site and occurred in scattered locations, rather than dense patches. Because red brome and fennel were scattered throughout the Property and intermixed with other invasive species, it was not possible to map them as discrete patches, except as shown in Figure 11.

The garland chrysanthemum on-site exists as dense patches, most of which occur as a monoculture with less than one percent cover of any other plant species (native or exotic). Extensive stands of chrysanthemum can be found throughout the Property but are especially concentrated along the sides of roads and trails and along the borders of the Property. Associated with high disturbance levels, this species was likely introduced from neighboring properties—which were also observed to contain monocultures of chrysanthemum—and then propagated through cutting of unauthorized trails, the use of maintenance roads, and other seed and propagule introduction. Wildfires, mowing, and other large-scale vegetation removal and disturbances would also contribute to the establishment of this species on the Property.



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Invasive Species

Figure 11

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Date: 11/17/2011

Short-pod mustard and Malta starthistle (tocalote) are both associated with high levels of disturbance. Both are common colonizers following wildfire, mowing, and other large scale vegetation disturbances. The mustard appeared to be confined to small and defined patches with individuals scattered at low densities throughout the Property. The Malta starthistle appeared to be present in a large monoculture on the northern area of the Property where open space borders San Ysidro middle school and Otay Mesa Road. Malta starthistle was also common on the northern area of the Property, just off- site and within the stands of cholla on-site. In addition, this species was intermixed with other non-native species throughout the non-native grassland semi-natural stand.

A smaller stand of wild oats was present within the southern portion of the Property. This species is present in lower densities and as scattered individuals within the non-native grassland on-site. This species is considered a moderate risk by Cal-IPC.

3.3 Wildlife Species

3.3.1 Wildlife Species Present

Invertebrates

A complete list of invertebrate species identified on the Property below the level of family is included in the faunal list of the Biological Diversity Baseline Report (Appendix B). No special-status butterfly species or other invertebrate species were detected during the 2011 surveys and no special-status invertebrate species have high potential to occur at the Preserve.

Butterflies

Surveys conducted in April and June 2011 resulted in 83 observations representing ten (10) species of butterflies. The west coast lady (*Vanessa anabella*) and Pacific Sara orangetip (*Anthocharis sara sara*) were the most frequently observed species in the survey area. Other species included funereal duskywing (*Erynnis funeralis*), common California ringlet (*Coenonympha californica californica*), gray hairstreak (*Strymon melinus pudica*), red admiral (*Vanessa atalanta rubria*), common buckeye (*Juonia coenia*), anise swallowtail (*Papilio zelicaon*), cabbage white (*Pieris rapae*), and Behr's metalmark (*Apodemia mormo virgulti*).

No Quino checkerspot butterfly (*Euphydryas editha quino*) was observed within the Property; however, based on regional distribution in the vicinity of the Property, habitat preferences, and the presence of a small amount of habitat on the Property (Figure 12), there is the possibility this species could occur on-site. Quino checkerspot is generally associated with sage scrub, open chaparral, grassland, and vernal pool habitats (USFWS 2003). Within these habitats the species is usually observed in open or sparsely vegetated areas (including trails and dirt roads), and

on hilltops and ridgelines (USFWS 2003). The primary larval host plant is dot-seed plantain (*Plantago erecta*) which was observed on the Property during the butterfly surveys, though very sparse and in a desiccated condition (due to season). Other habitat features onsite that potentially support Quino include open native habitat, dirt roads and trails, and hilltops and ridges. The quality of the habitat on-site is considered low due to the prevalence of non-native grasses and forbs and the sparseness of larval host plant.

Other Invertebrates

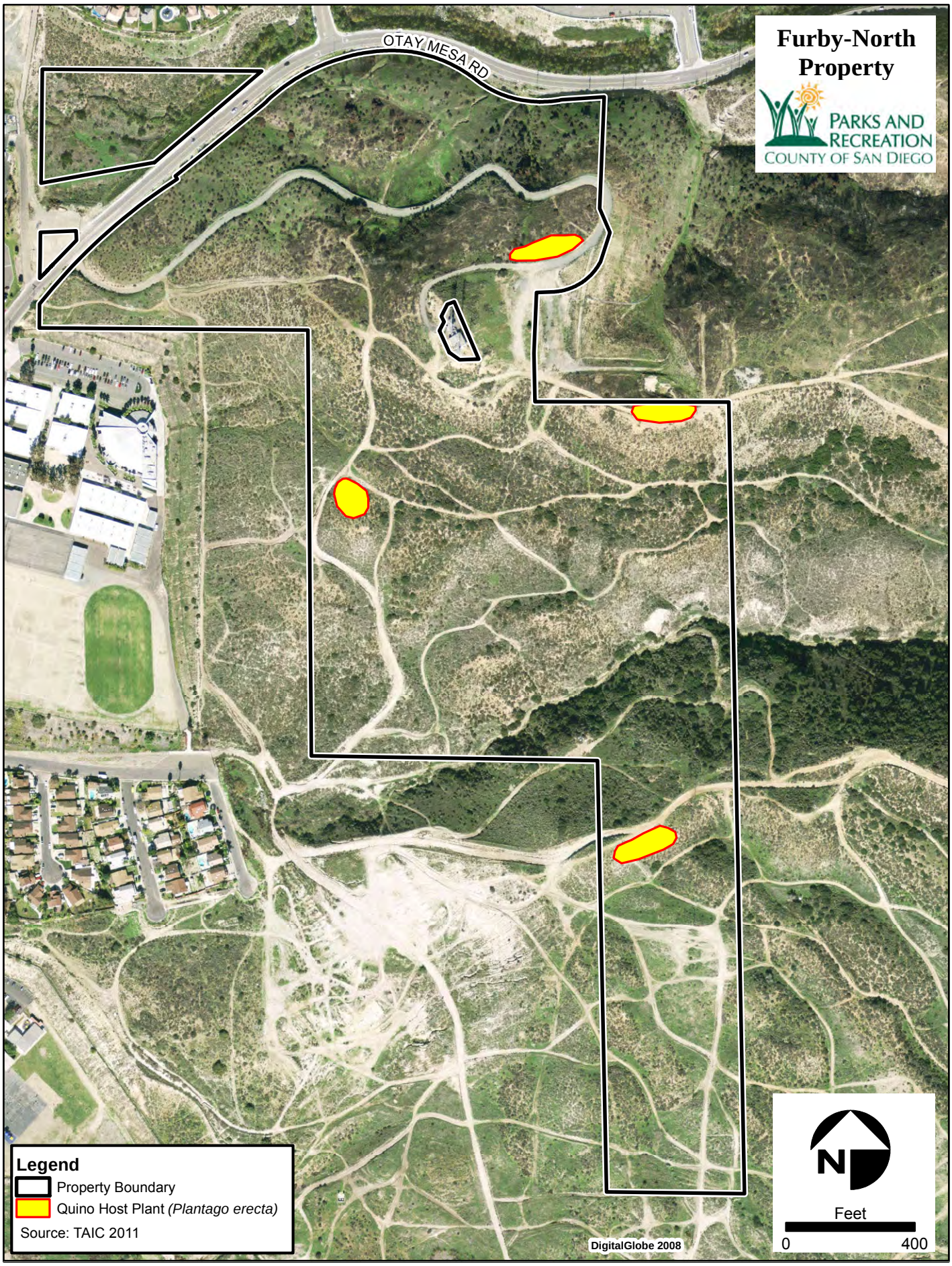
No additional invertebrate surveys were conducted. A few additional invertebrate species were incidentally observed during other surveys (e.g. small mammal trapping, rare plant surveys, vegetation mapping). The invertebrates recorded were common, highly visible species including beetles, bees, and wasps.

While the baseline surveys for invertebrates were restricted to butterflies, the invertebrate fauna on the Property is likely diverse. The vegetation community diversity alone indicates a broad range of insect pollinators. Several species of the Tenebrionidae (darkling beetle) family were observed. These species are generally ground obligate and feed on both live and decaying plant matter. In addition, several active bee hives, mostly likely of the common honey bee (*Apis mellifera*), were also recorded. Other species of the order Hymenoptera noted include wasps, most likely the common yellowjacket (*Vespula squamosa*). At least one spider wasp, a tarantula hawk (*Pepsis* sp.), was noted during vegetation mapping.

Amphibians

Only one species of amphibian was detected during baseline surveys (Table 7); however, detections of amphibians made up approximately 36 percent of all captures at pitfall array 1. Eight (8) western spadefoot toads (*Spea hammondii*), a California Species of Special Concern (CSC), were captured exclusively in the northernmost array in the Jojoba-San Diego Sunflower Association vegetation community. This array was located a few meters away from a derelict footpath down slope from a regularly used dirt road. Substrate at this location was littered with shrub leaves and some thatch and there is a prevalence of rodent burrows at this site.

One subadult toad was found dead in a funnel trap after it was removed from the array at the end of the April survey period, and another during the May survey period. Both voucher specimens were taken to the San Diego Museum of Natural History for placement in the permanent collection.



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Potential Quino Checkerspot Butterfly Habitat

Figure 12

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Date: 10/10/2011

Toads were not captured at the second array, where the habitat consisted of mostly intact California sagebrush adjacent to non-native grasses and garland chrysanthemum. Also undetected were salamanders, which are increasingly active during wet periods. Timing of surveys did not occur during spring rainfall and may account for the lack of salamander detections.

With the presence of both subadult and adult toads, the western spadefoot toad is evidently breeding on or near the survey site. At least one vernal pool has been identified within the Property boundary and another just outside, but the proximity to survey locations (e.g. pitfall arrays) would suggest that other complexes are being used for breeding purposes.

Reptiles

During the 2011 inventory surveys at the Property, eight (8) reptile species were observed. Five (5) lizards and two (2) snakes were detected with three (3) having special status. Special-status species included California legless lizard (*Anniella pulchra*), coast horned lizard (*Phrynosoma coronatum*), and orange-throated whiptail (*Aspidoscelis hyperythrus*). Lizard species accounted for half of all herpetofauna captures (52 percent). Western fence lizards (*Sceloporus occidentalis*) accounted for the greatest number of lizard captures (59 percent); however at array 1, almost as many southern alligator lizards, (*Elgaria multicarinata*) were captured as western fence lizards (six and seven captures, respectively). The orange-throated whiptail, a California Species of Special Concern (CSC), was observed twice at array 1; one chance observation occurred near the array in April, and an adult male was captured during the May survey period.

Two special-status lizard species were incidentally observed. During the installation of array 1, a California legless lizard was unearthed. In addition, one adult coast horned lizard was seen basking on a dirt road several meters away from, and upslope of, array 2 in habitat dominated by buckwheat and dudleya. Both species are considered to be California Species of Special Concern.

An equal number of striped racers (*Coluber lateralis*) and southern pacific rattlesnakes (*Crotalus oreganus helleri*), were present as pitfall captures (four total), although southern pacific rattlesnake was captured almost exclusively during April surveys while striped racers were present only during May surveys. An additional snake species, a long-nosed snake (*Rhinocheilus lecontei*), was unearthed during the installation of array 1 in April. An additional long-nosed snake was incidentally observed by biologists during small mammal trapping data collection efforts near the southern end of the Property.

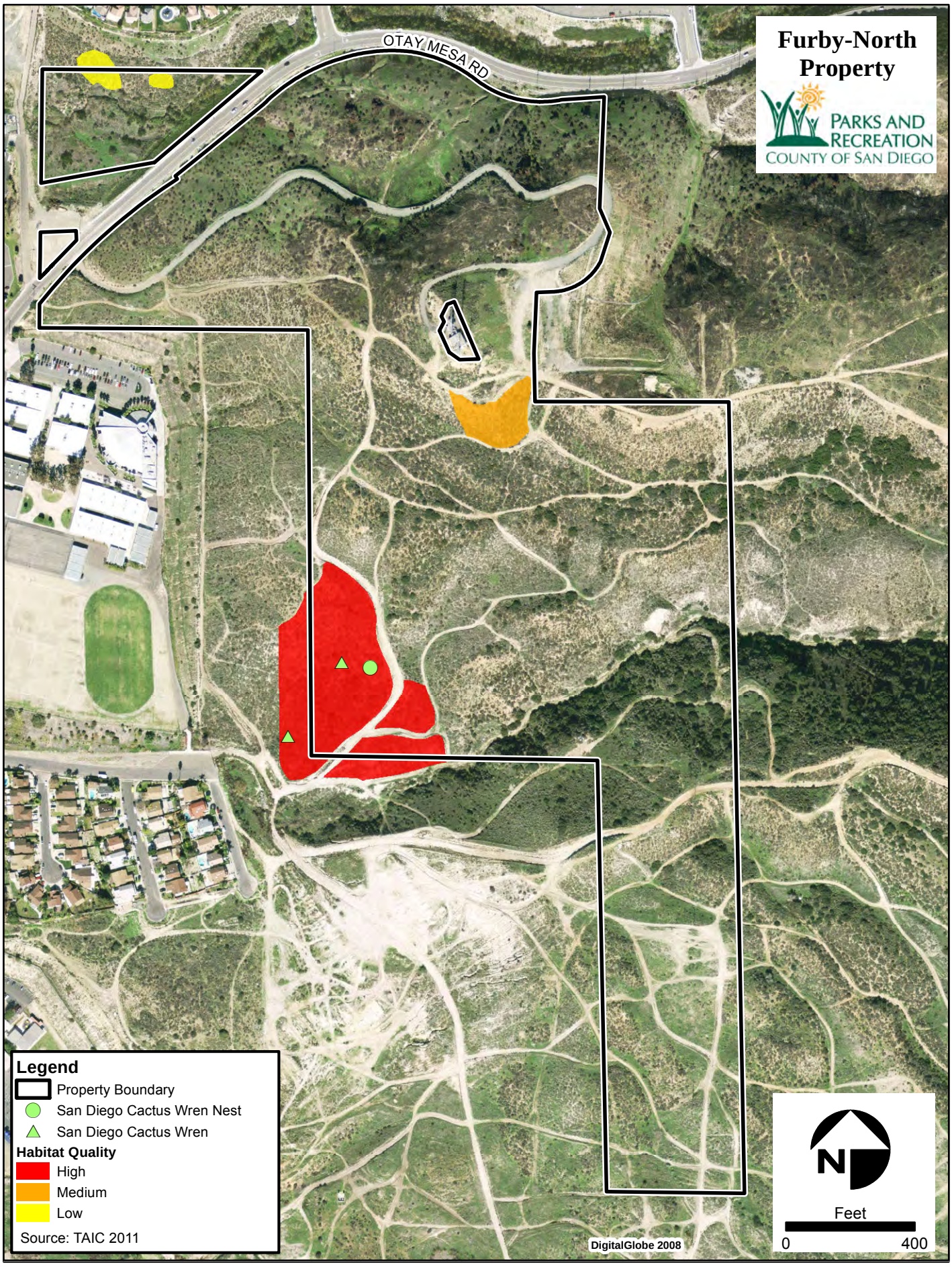
Birds

A total of 48 species were detected on the Property during 2011 surveys including eight (8) special-status species and five (5) City MSCP Subarea Plan covered species. Station 2 located in the east-central portion of the Property in Jojoba-San Diego Sunflower Association shrublands, was the most active, accounting for 89 detections total. The most commonly detected species (with 120 detections total) was the common house finch (*Carpodacus mexicanus*) which likely reflects the Property's proximity to highly urbanized areas. Sensitive species detected include the least Bell's vireo (*Vireo bellii pusillus*), coastal California gnatcatcher (*Polioptila californica californica*), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), yellow-breasted chat (*Icteria virens*), California horned lark (*Eremophilus alpestris actia*), and the southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*). A complete dataset from nocturnal and diurnal surveys is provided in Appendix B.

While the high detection rate at Station 2 can be attributed to sampling bias, the homogeneity of representative vegetation communities onsite likely negates this. Because the stations 1-5 were visited in chronological order and because birds are most active in the early morning, the large number of detections at station 2 may be attributed to an early morning sampling bias. However, outside of the wetter areas and north-facing slopes, the general vegetation homogeneity on the Property would offset this potential bias, especially because many data were collected during peak migration (mid-April through mid-May).

No species were detected during nocturnal surveys conducted on April 27. This could be attributed, in part, to the high level of artificial noise input from the surrounding areas. These sources include vehicles, aircraft, and residential ambient noise (e.g. barking dogs, radio, television, outdoor conversations). This may also be due to the relatively small size of the Property or simply be a statistical anomaly to be corrected by additional nocturnal surveys.

As shown in Figure 13, several patches of potential habitat for the coastal cactus wren occur onsite. High quality habitat on the western portion of the Property consists of dense cholla cactus. During mammal trapping surveys, this species was incidentally observed flying in and out of the cactus. A nest was observed in this area at the same time, although it was unclear if the nest was active at the time of surveys.



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Potential Cactus Wren Habitat

Figure 13

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Date: 10/21/2011

Mammals

A complete list of mammal species observed within the Preserve during the 2011 surveys is included in the faunal list of the Biological Diversity Baseline Report (Appendix B).

Small Mammals

In total, 15 small mammal species were recorded at the Property during small mammal trapping and other surveys. Detection rates of small mammals were extremely high on the Property in all areas sampled. Trap lines, on average, had a 30-50 percent capture rate on all days sampled. Because trapping success was high, trap lines were rotated across multiple vegetation communities to capture the greatest diversity of species possible on the Property given the sampling period. Given the level of disturbance on the Property (e.g. stands of non-native vegetation such as garland chrysanthemum) and the close proximity to urban areas, it was expected that there would be multiple captures of urban adapted and non-native species such as the common rat (*Rattus rattus*) and house mouse (*Mus musculus*). While one house mouse and one California ground squirrel were captured on the traplines nearest the urban edge to the south, the Property is remarkably free of non-native small mammal species.

Small mammals representative of the coastal sage scrub community, such as the California and San Diego pocket mouse, were frequently captured in traplines throughout the Property. Woodrats were also found throughout the Property. Traplines in grassy areas and vegetation community transitional areas yielded two detections of meadow vole (*Microtus californicus*). Only one kangaroo rat (*Dipodomys agilis*) was trapped during the entire sampling period. Kangaroo rats are notoriously "trap shy" but may also be found in a lower density on this Property. The western harvest mouse (*Reithrodontomys megalotis*) was also only trapped once during the sampling period. Although this species has a wide distribution range, it may be present in lower densities on the Property.

The presence of pocket mouse (*Chaetodipus* spp.) at every trapline indicates a widespread and robust population of mice native to the southern California region. In addition, both male and female mice were captured with many displaying active reproductive characteristics (such as lactating or pregnant females). Large stands of cholla, scattered barrel cactus and prickly pear, and other succulents on the Property also support cactus mouse. While not captured at Station 1, which had the densest stand of cholla, cactus mouse was captured at Station 3 which was surrounded by scattered barrel cactus and maritime succulent scrub vegetation with bare open ground in the northeast area of the Property. All of these species have a range restricted to southwestern California and northern Baja Mexico.

Also found throughout the Property were woodrats (*Neotoma* sp.) with many individuals reproductively active (lactating and pregnant females). At least one

species of woodrat was trapped at every line in every station on the Property. All three species of woodrat native to San Diego County were detected: white-throated (*N. albigula*), dusky-footed (*N. fuscipes*) and desert (*N. lepida*) woodrat (SDNHM 2011). While the dusky-footed and desert woodrat were seen across the Property, the white-throated woodrat was only seen on the southernmost portions (Stations 1 and 5). This likely reflects the species' preference for cholla and prickly pear cactus. A few of the individuals captured on the northern most portion of the Property (e.g. Station 4) had significant bald spots on their heads. It is not clear if this is the result of disease, behavior, or a heritable trait, but should be noted.

Only small portions of the Property contain native grassy and open areas large enough to support the related small mammal community. However, two meadow voles were captured at Station 5 in the south central portion of the Property during the last week of the sampling period. Voles were captured in two separate traps in close proximity to each other; it is possible this was a recapture. A juvenile California ground squirrel was also trapped at this trapline. While the traps are not designed to capture ground squirrel, it is not uncommon to incidentally trap these species.

A single agile kangaroo rat was captured on Station 2 in the south central portion of the Property during the first week of the sampling period. This species was trapped along a steep eastern facing slope in vegetation mapped as Jojoba-San Diego Sunflower association. Because this vegetation type is present throughout the Property in large, contiguous swaths, and the kangaroo rat is difficult to trap, future surveys will likely detect this species on other areas of the Property; key habitat components include steep slopes with little understory vegetation in coastal sage scrub vegetation communities.

Medium and Large Mammals

A total of five medium and large mammal species were detected in the Preserve through camera stations, tracks, sign, and nocturnal surveys: bobcat (*Lynx rufus*), coyote (*Canis latrans*), American badger (*Taxidea taxus*), and brush rabbit (*Sylvilagus audubonii*). Detection rates of medium and large mammals during focused surveys were especially low. While the combination of video camera and track stations combined with scent lure is designed to capture the greatest diversity of medium and large mammals possible, the survey period (e.g. season) and copious amounts of anthropogenic activity onsite was not conducive to high levels of detection.

The camera stations failed to detect carnivores on-site. The placement of the cameras along trails was based on tracks and scat found in the vicinity and within the Property and the fact that dirt paths are often highly traveled by coyotes, bobcats, and other carnivores used to following game trails. Unfortunately, the large amount of unauthorized access on the Property lead to the scattering of gypsum track stations and the removal and/or disruption of scent lure placement on several

occasions. Multiple camera and track station locations were used in an attempt to capture animal movement and avoid human interference.

While the camera and track stations were less successful, several incidental observations confirmed the presence of multiple taxa of medium and large mammals on site. A badger burrow, bobcat scat and tracks, and observations of coyote on and off-site along with scat and tracks added to data collection efforts.

Bats

A total of four (4) bat species were detected using passive Anabat surveys during the two seasons of bat monitoring. The following species were detected on-site: California myotis (*Myotis californicus*), western pipistrelle (*Pipistrellus hesperus*), Big brown bat (*Eptesicus fuscus*), and Brazilian free-tail bat (*Tadarida brasiliensis*). The habitat on the Property does not seem to support resident roosting populations of bats, as no individuals were detected emerging from potential rocky outcrops or trees during the survey period. In addition, the Property does not appear to contain suitable roosting habitat for cliff, crevice, or boulder roosting bats. Rocky outcrops that were present were small and close to the ground; undesirable habitat for roosting bats. The riparian areas also seem to lack suitable habitat for tree roosting bats. Tree roosting bats often prefer mature palm trees with intact palm frond skirts or other mature trees with dense canopies. Those individuals detected on-site during surveys were generally flying through the Property (east to west) rather than roosting or foraging in it.

3.3.2 Rare, Threatened or Endangered Wildlife Present

A special-status wildlife species is one (a) listed, or proposed for listing, as threatened or endangered, or otherwise designated as “listed”, “candidate”, “sensitive” or “species of concern” by federal and/or state agencies; (b) included on the County’s Sensitive Animal List (County 2010b); or (d) covered under the City MSCP Subarea Plan.

A total of 12 special status wildlife species were observed on-site, and four (4) were observed just off-site (Figure 14). When species are identified just off-site and the habitat type is similar and/or the Property is contiguous, it can generally be assumed that these species are also present onsite. Information on each of these species is provided below.

3.3.2.1 *Amphibians*

Western spadefoot toad (*Spea hammondii*)

Federal Species of Concern, State Species of Special Concern, San Diego County List Group 2

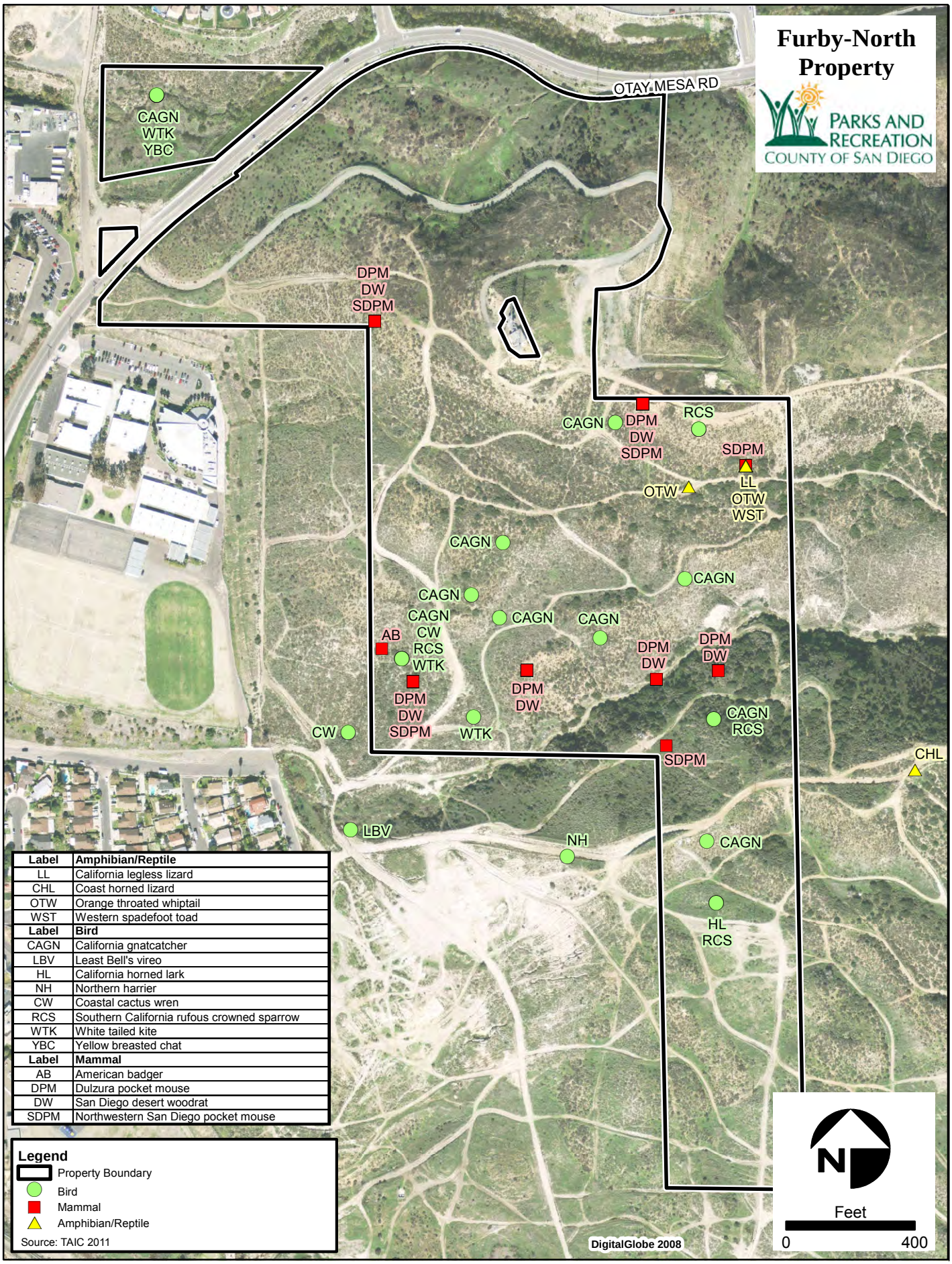
The western spadefoot toad is distributed throughout the coastal and inland areas of central and southern California and into northern Baja Mexico. The species is almost exclusively terrestrial and nocturnal. It is able to inhabit hot dry areas by burrowing underground using the spade-like appendages on its hind feet. This species uses temporary rain pools, such as vernal pools, for breeding; for this reason it is active for only a short time of the year. Its decline in the southern California area has been associated with the rapid urbanization that has accompanied explosive human population growth. In addition, the loss of temporary rain pools (such as vernal pools) has been a contributing factor to spadefoot toad population decline. This species is covered by the MSCP because of its rapid decline in the San Diego area. A total of 8 observations of this species were made at pitfall array 1, including one that was incidentally unearthed during the installation of the array. The highest number of individuals observed on a single day (May 26, 2011) was three.

3.3.2.2 *Reptiles*

Coast horned lizard (*Phrynosoma cornonatum*)

Federal Species of Concern, State Species of Special Concern, San Diego County List Group 2, City MSCP Subarea Plan Covered Species

The coast horned lizard is distributed throughout the coast of California and into northern Baja Mexico. This species prefers open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains. Its primary food source is harvester ants, native to the southern California region; this specialty diet is intimately related to its subsequent decline in southern California and San Diego County. The rapid urbanization of the southern California region has facilitated the invasion of the Argentine ant which is associated with residential areas. These ants displace the native harvester ants and thus, there is less food available for the coast horned lizard. This species is covered by the MSCP because of its recognized decline regionally. This species was identified just off-site through an incidental observation.



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Sensitive Wildlife Species

Figure 14

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Date: 11/17/2011

Orange-throated whiptail (*Aspidoscelis hyperythrus*)

State Species of Special Concern, San Diego County Group 2, City MSCP Subarea Plan Covered Species

The orange-throated whiptail inhabits low-elevation coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitats (Morey 2000). This species is restricted to the extreme southwest of California and northwest of Baja California Norte, Mexico (Stebbins 2003). In California, it is found on the west side of the Peninsular Ranges between sea level and 3,000 feet, in Los Angeles, San Bernardino, Orange, Riverside, and San Diego counties (Zeiner et al. 1988). It is still locally common in many areas where it remains. The principal threat to the orange-throated whiptail is degradation and loss of habitat, however it is also impacted by off-road vehicle activity, over-grazing by livestock, and predation by introduced predators (e.g., cats and dogs) (San Diego Herpetological Society 1988). A limiting factor to the species' range is the availability of its primary food item, the termite (*Reticulitermes hesperus*). Within the Property, the orange-throated whiptail was captured twice at one pitfall array; one chance observation occurred near the array in April, and an adult male was captured during the May survey period at the array. The Property probably contains a low density of prey due to the low density of trees and woody shrubs that would support termites.

California legless lizard (*Anniella pulchra*)

State Species of Special Concern

The California legless lizard is a very small slender lizard with smooth scales and no legs. It is sometimes confused for a snake; however eyelids (a diagnostic character) are visible. Although sometimes found on the surface at dawn and dusk, this lizard spends most of its time underground in loose, sandy soil or under leaf litter, where it forages for insects and spiders. The preferred habitat for this species is moist, sparsely vegetated areas of scrub, washes and stream terraces with loose soil and leaf litter. Within the Property, this lizard was found incidentally in the soil while installing pitfall trap array 1 in the northeastern area of the Property.

3.3.2.3 *Birds*

Least Bell's vireo (*Vireo bellii pusillus*)

Federal Endangered, State Endangered, San Diego County Group 1, City MSCP Subarea Plan Covered Species

The least Bell's vireo was formerly widespread and abundant throughout the Central Valley of California and other low-elevation river valleys, in the Sierra Nevada foothills and the Coast Ranges, and its range extended from Red Bluff (Tehama County) to northwestern Baja California, including populations in the Owens Valley, Death Valley, and the Mojave Desert. Today the species is apparently extirpated from the Sacramento and San Joaquin valleys, and by 1983 nesting was restricted to several localities in the Salinas River Valley (Monterey and San Benito counties), one locality along the Amargosa River (Inyo County), and numerous small populations in southern California south of the Tehachapi Mountains and in northwestern Baja California (Matthews and Moseley 1990), south to at least Mission San Fernando and probably to Catavina. Nests are usually placed along the margins of bushes (usually willow, baccharis, or mesquite) or on twigs projecting into pathways. The species is endangered due to loss of breeding habitat (i.e. thick, low riparian growth), mainly attributed to agricultural and urban development, and river channelization projects. Another major factor in reduced breeding success is nest parasitism by brown-headed cowbirds (*Molothrus ater*). In San Diego County the least Bell's vireo is a summer resident in low riparian habitat in the vicinity of water or in dry river bottoms.

The least Bell's vireo was detected twice in two different drainages with southern willow scrub immediately off-site, southwest of the Property on City of San Diego-owned land. There is no suitable nesting habitat for this species onsite. The two drainages where the vireo was observed are unsuitable as nesting habitat for this species because the southwestern willow scrub patch is isolated and small. The detections were likely the result of migrating birds or dispersing juveniles. At its current habitat conditions, the Property is not considered to support least Bell's vireo.

Coastal California gnatcatcher (*Polioptilia californica californica*)

Federal Threatened, State Species of Special Concern, San Diego County Group 1, City MSCP Subarea Plan Covered Species

The coastal California gnatcatcher is a resident of southwestern California from Los Angeles County southward to northwestern Baja California, extending south to about 30 degrees north latitude near the vicinity of El Rosario and eastward to the eastern base of the Sierra San Pedro Martir. The species was once extensively distributed in Los Angeles County but is now reduced to a small portion of the Palos Verdes Peninsula, and is seldom found above 250 m in Orange, Ventura (rarely), San Bernardino, Riverside, and San Diego counties. Its decline in California is attributed

to loss and fragmentation of habitat due to urban development throughout its range. Coastal California gnatcatcher is a permanent resident of low coastal sage scrub habitats in arid washes and on mesas and slopes. The species is known to frequent several distinctive subassociations of the coastal sage scrub plant community; especially those dominated by California sagebrush, but are also known to generally avoid crossing even small areas of unsuitable habitat. The coastal California gnatcatcher was identified onsite in several locations: observed during point counts near stations 1, 3, and 4; and observed incidentally during other surveys near stations 2 and 5 in the central portion of the Property. Although sparse in some areas, extensive Diegan coastal sage scrub (preferred nesting habitat of the gnatcatcher) is present onsite. A large portion of the Property supports vegetation conducive to gnatcatcher breeding and foraging activities. It is likely that multiple pairs of gnatcatchers are actively breeding on-site.

Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*)

State Species of Special Concern, San Diego County Group 1, City MSCP Subarea Plan Covered Species

The coastal cactus wren is distributed from southern Ventura County, southeast to the Baldwin Hills and the Palos Verdes Peninsula in Los Angeles County, and east along the southern flank of the San Gabriel and San Bernardino mountains from the northern San Fernando Valley in Los Angeles County to Mentone in San Bernardino County. Populations also extend south along the coastal slopes and interior valleys west of the Peninsular ranges in western Riverside, Orange, and San Diego counties to extreme northwestern Baja California, Mexico, in the vicinity of Tijuana and Valle de las Palmas (Harper and Salata 1991). The species occurs in coastal sage scrub habitats and requires tall opuntia cactus for nesting and roosting. Coastal cactus wren is considered a State Species of Special Concern as populations are under decline due to decline and fragmentation of habitat, particularly undisturbed coastal sage scrub vegetation, due to urbanization and residential development.

This species was identified as present on-site and just off-site through incidental observations. A large patch of high quality nesting habitat consisting mainly of cholla cactus exists on the southwestern portion of the Property. It is likely that cactus wrens breed onsite as nest-remnants were found within the identified nesting habitat. However, annual breeding—confined to spring time—would need to be confirmed through breeding survey and evidence such as observation of provisioning or removal of fecal sacs as this species maintains a nest year-round.

White-tailed kite (*Elanus leucurus*)

State Fully Protected, San Diego County Group 1

The white-tailed kite is a year-long resident of cismontane habitats throughout most of the western half of California and along the Colorado River to the east. The species prefers coastal and valley lowlands near agricultural areas, and can also be found in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodlands. White-tailed kites often forage in open grasslands, meadows, or marshes, and require isolated, dense-topped trees for roosting and nesting. White-tailed kite was seen frequently in flight over the Property and may forage extensively on-site. However, this species is an arboreal nester and would likely breed off-site as there are no trees on the Property.

Yellow-breasted chat (*Icteria virens*)

State Species of Special Concern, San Diego County Group 3

The yellow-breasted chat is an uncommon summer resident and migrant in coastal California and in foothills of the Sierra Nevada. Found up to about 1450 m (4800 ft) in valley foothill riparian, and up to 2050 m (6500 ft) east of the Sierra Nevada in desert riparian habitats. The species is uncommon along the coast of northern California east to the Cascades and occurs only locally south of Mendocino County. In southern California, it breeds locally on the coast and very locally inland. In migration, it can be found in lower elevations of mountains in riparian habitat (Zeiner, D.C. et al. 1988-1990). Yellow-breasted chat inhabits riparian thickets of willow and other brushy areas near watercourses, and forages and nests close to the ground (within 10 feet). The species nests in low, dense riparian habitat often consisting of willow, blackberry, and wild grape. Breeding populations in California have experienced a marked decline due to loss and degradation of riparian habitat. Yellow-breasted chat was detected on the first survey near station 1 in the drainage north of Otay Mesa Road. The Property lacks the well-developed riparian vegetation that the species prefers for nesting and thus would not be expected to nest on-site.

Horned lark (*Eremophila alpestris actia*)

State Watch List, San Diego County Group 2

Horned lark is distributed in coastal areas of California, primarily Sonoma County South to San Diego County and east in the main part of the San Joaquin Valley to the Sierra Nevada foothills. The species can be found in a variety of habitats including short-grass prairie, bald hills, mountain meadows, open coastal plains, fallow grain fields, and alkali flats. The horned lark prefers open areas dominated by low herbaceous vegetation or widely scattered low shrubs. The species nests in hollow ground often next to grass tufts, earth clods, or manure. California horned lark populations in California are in decline due to habitat degradation associated

with agricultural development. This species was identified on the Property in flight by call from point count station 5. The species may nest on-site as the habitat is appropriate; it prefers flat, semi-open ground.

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)

State Watch List, San Diego County Group 1, City MSCP Subarea Plan Covered Species

The Southern California rufous-crowned sparrow is a resident of southwestern California in the slopes of the Transverse and Coastal ranges, north from Los Angeles County to northern Baja California, Mexico. The species inhabits coastal sage scrub and sparse mixed chaparral habitats. This species frequents relatively steep, often rocky hillsides with grass and forbe patches. The species nests on or close to the ground at the base of rocks, grass tufts, or saplings 0-3 m above ground in branches of shrubs or trees. The Southern California rufous-crowned sparrow population is in decline due to habitat loss and degradation due to urbanization and related development. This species was previously considered a Species of Special Concern (SSC) by CDFG, but is currently on the Watch List. The Watch List consists of taxa that were previously SSCs but no longer merit SSC status or which do not meet SSC criteria but for which there is concern and a need for additional information to clarify status (CDFG 2011). This species was observed on-site at several survey stations and is anticipated to nest on the site as adequate habitat is available.

Northern harrier (*Circus cyaneus*)

State Species of Special Concern, San Diego County Group 1, City MSCP Subarea Plan Covered Species

The northern harrier is distributed throughout North America and Eurasia (Johnsgard 1990). Northern harriers breed from northern Alaska and Canada, south into roughly the northern two-thirds of the western United States, and the northern one-third of the eastern United States. Wintering harriers utilize the southern portion of the breeding range and extend farther south into Central America. San Diego County lies at the southwest edge of the harrier's breeding range in North America (Johnsgard 1988). Northern harrier is an uncommon to fairly common winter visitor and rare and local summer resident in the coastal lowlands of San Diego County (Unitt 2004). Harriers breed in marshes and grasslands and forage in grasslands, agricultural fields, wetlands, and open coastal sage scrub. Home ranges and breeding territories are variable in size and probably reflect differing habitat resources (Johnsgard 1990). Harriers have declined in California in recent decades but can be locally abundant where suitable habitat remains free of disturbance, especially from intensive agriculture (Zeiner et al. 1988-1990). The breeding population, especially in coastal southern California, is reduced because of destruction of native wetland, meadow, and grassland habitats, and burning and

plowing of nesting areas during early stages of the breeding cycle (Remsen 1978). The species was observed in flight over the southern portion of the Property on at least two occasions. Nesting of this species was confirmed in this area during surveys conducted for the San Diego Bird Atlas (Unitt 2004). The northern harrier is a ground nester under low vegetation and may breed within the Property boundaries.

3.3.2.4 *Mammals*

Dulzura pocket mouse (*Chaetodipus californicus femoralis*)

State Species of Special Concern

The Dulzura pocket occurs along the western portion of San Diego County and northern Baja California, Mexico. This species prefers dense scrub and is less likely to be found in open grassland and desert habitats. They prefer sandy and gravely soils for burrowing and feed predominantly on seeds and grains. This species was found throughout the Property. All traplines were associated with, or adjacent to, chaparral and other dense scrub. This species is not covered under the MSCP. The CDFG calls out various subspecies of *C. californicus* as Species of Special Concern but notes that the whole species should be considered sensitive. This is likely due to overlapping ranges of sensitive subspecies and the difficulty of in-field identification of sensitive subspecies during live-trapping.

Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)

State Species of Special Concern

The northwestern San Diego pocket mouse is restricted to coastal southern California and northern Baja California, Mexico. The northern extent of this species' range is the southeastern portion of Los Angeles County. This species has habitat requirements similar to those of the California pocket mouse, but with a greater preference for desert biomes and rocky and gravelly soils. While the habitat for this species exists throughout the Property, it is possible that competition with the more ubiquitous California pocket mouse has restricted this species' distribution on the Property. This species is not covered under the MSCP. The CDFG calls out various subspecies of *C. fallax* as Species of Special Concern but notes that the whole species should be considered sensitive.

San Diego desert woodrat (*Neotoma lepida intermedia*)

State Species of Special Concern, San Diego County Group 2

The San Diego desert woodrat is restricted to coastal southern California and coastal Baja California, Mexico. This species is a desert dwelling woodrat which relies on fleshy cacti and succulents as a water source. Because of this, the

middens this species builds can often be found at the base of cactus plants and will often include cactus parts along with sticks, leaves, and other vegetation detritus. These middens act as insulation against environmental temperature extremes and as protection from predators. This species is also strongly associated with coastal sage scrub habitats, which is why it has experienced decline. Loss of appropriate habitat combined with a limited distribution makes the San Diego desert woodrat a CDFG Species of Special Concern. This species was identified at each of the trapping locations.

American badger (*Taxidea taxus*)

State Species of Special Concern, San Diego County Group 2, City MSCP Subarea Plan Covered Species

The American badger has a distribution across much of North America, but has become increasingly rare in southern California. Badgers are normally associated with open, treeless areas including: prairies, parklands, and cold desert areas. This species digs and utilizes multiple ground burrows where it resides for much of the daytime. Principally nocturnal, the badger preys primarily on fossorial (e.g. ground-associated) rodent and other small mammals including skunks. However, it is known to consume birds, reptiles and other terrestrial-obligate species. The decline in badger population can be primarily attributed to habitat loss. The clearing of sagebrush and development of open lands for grazing and agriculture all affect small mammal (e.g. prey) populations as well as available burrowing habitat. The badger is an MSCP-covered species because of its recognized local decline in population as well as its importance as a mesopredator. This species, while not observed directly, was detected on the Property through sign. A burrow with a skunk remnant was identified and various areas of scratchmarks were also identified during small mammal trapping sessions. The large prey base (especially the abundance of *Neotoma* sp.) as well as the brushy and treeless open vegetation makes for ideal badger habitat. It is likely there are multiple individuals on the Property.

3.3.3 Rare, Threatened or Endangered Wildlife with High Potential to Occur

Nineteen (19) special-status wildlife species have a high potential to occur within the Park as described below. Additional information on these species can be found in Appendix B.

3.3.3.1 *Herpetofauna*

Coastal whiptail – *Aspidoscelis tigris stejnegeri*

San Diego County Group 2

The coastal whiptail is known from the Otay Mesa area and has a high potential to occur on the Property. The coastal whiptail prefers the same habitat as the orange-throated whiptail (which was detected on-site) such as open areas for running. The coastal sage scrub habitat (e.g. Jojoba-San Diego Sunflower association) on the northern portion of the Property which contains lower understory vegetation and more open areas would be considered preferred habitat.

Patch-nosed snake (*Salvadora hexalepis virgultea*)

State Species of Special Concern, San Diego County Group 2

Patch-nosed snake is known from the Otay Mesa area and has a high potential to occur on the Property. The coastal sage scrub habitat (e.g. Jojoba-San Diego Sunflower association) on the northern portion of the Property which contains lower understory vegetation and more open areas would be considered preferred habitat for this snake. The patch-nosed snake prefers open areas for foraging and loose soils for burrowing.

Coronado skink (*Plestiodon skiltonianus interparietalis*)

State Species of Special Concern, San Diego County Group 2

The Coronado skink can be found in a wide variety of habitats, including grassland and chaparral, and prefers early successional stages or open areas, as well as rocky areas near streams and dry hillsides. This species is known to occur within 5 kilometers of the Property. The Property offers adequate habitat, soil type and commonly coexisting species to support the Coronado skink.

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)

State Species of Special Concern

The San Diego black-tailed jackrabbit is likely present on the Property but was not observed during initial biodiversity assessments. Like many rabbits and hares, the

population numbers of the black-tailed jackrabbit can fluctuate greatly from year to year. The resources available on the Property, the presence of other rabbits, and the known distribution of the black-tailed jackrabbit all indicate that this species will likely be detected on the Property during future survey efforts.

3.3.4 Non-native and/or Invasive Wildlife Species

No non-native invasive animal species were detected during 2011 baseline biological surveys.

3.4 Overall Biological and Conservation Value

The Property is located within the southern portion of the Otay Mesa areas of the MHPA of the City MSCP Subarea Plan. The Otay Mesa Area consists primarily of slopes and wide, deep canyons draining the vast mesas into the Otay River Valley or towards Mexico, with one linkage connecting south to north across Otay Mesa Road. The optimum future condition envisioned for the Otay Mesa area is a network of open and relatively undisturbed canyons containing a full ensemble of native species and providing functional wildlife habitat and movement capability.

This area supports prime examples of sensitive habitats of the coastal lowlands, such as high quality coastal sage scrub, maritime succulent scrub, wetlands, vernal pools and significant populations of MSCP covered species. These include San Diego thorn-mint, Orcutt's bird's-beak, Orcutt's brodiaea, variegated dudleya, San Diego button-celery, coast barrel cactus, Otay tarplant, prostrate navarretia, small-leaved rose, Riverside fairy shrimp, San Diego horned lizard, orange-throated whiptail, Wright's checkerspot butterfly, northern harrier, Cooper's hawk, golden eagle, peregrine falcon, burrowing owl, cactus wren and California gnatcatcher.

3.4.1 Wildlife Linkages and Corridors

The Property contributes to core habitat located on the southern portion of a City MSCP Subarea Plan designated wildlife linkage. The linkage connects the southernmost conserved lands in Otay Mesa Area to the northern most conserved lands. The wildlife linkage runs to the east of the Property across Highway 905 which bisects the constrained portion.

This wildlife linkage is designed to support the movement of large, highly mobile species such as medium and large mammalian carnivores, rabbits and hares, deer, and herpetofauna of various taxon. Increasing the core, live-in habitat, on the southern half of the linkage supports a larger population of primary producers (e.g. plants) and related herbivores and therefore more carnivores and other secondary and tertiary consumers. A larger core area also lessens the edge effects of the urban-wildland interface which can be especially severe when patches of conserved lands are small.

4.0 CULTURAL RESOURCES

San Diego County is characterized by a rich and varied historical past. Cultural resources which reflect this history consist of archaeological remains, historic buildings, artifacts, photographs, oral histories, Native American memories and public documents. This RMP identifies the known cultural resources within the Furby-North Property and describes areas of potential resources.

In 2011, an archaeological survey and site inventory was completed for the Property in compliance with the California Environmental Quality Act (CEQA) and County environmental guidelines to assist in continued and future land use and resource protection planning. The results of this study can be found in the report entitled, *Archaeological Resources Survey Report for the Furby-North Property, San Diego County, California* (ASM 2011) attached as Appendix C. This Phase I inventory involved site records searches, literature reviews, Native American consultation, historic map checks, field survey, and resource documentation. The survey and inventory results were used in the preparation of this RMP.

4.1 Site History

4.1.1 Pre-Contact

The people living in the southern part of San Diego County at the time of Spanish contact were called the Diegueño, after the mission at San Diego. However, as Hedges (1975:80) pointed out, many of the people living in the region were not affiliated specifically with the mission. In general, the term Kumeyaay has come into common usage to identify the Yuman-speaking people living in the central and southern part of the county and northwestern Baja California. Luomala (1978) uses the terms Tipai and Ipai to refer to the southern and northern Kumeyaay, respectively. The dividing line between the Tipai and the Ipai is approximately Point Loma to Cuyamaca Peak and Julian. The name Kamia has been used by anthropologists to refer to the Yuman-speaking people living in Imperial Valley.

The Kumeyaay people established a rich cultural heritage that was described in detail by Waterman (1910), Spier (1923), Hohenthal (2001), and others. The people were organized into communities, each having base camps and an extensive territory exploited for specific resources. Based on ethnohistoric and ethnographic information, a large number of village sites have been identified throughout San Diego County, including the ethnohistoric village of ‘Utay (Otay). Many of these villages were located along the coast, near river mouths; the varied environments offered by the ocean and riparian areas attracted large numbers of people to these areas (although a study by Christenson [1992] indicated that maritime resources were not as large a part of the diet as previously believed).

Examples of baskets and pottery from the nineteenth and early twentieth centuries indicate a high level of artistic achievement and craftsmanship. Many different types

of stone material were used for manufacturing tools, and exotic types were procured from other parts of the region. The remains of structures that were built at village sites can be seen in the archaeological record as stone foundations and circles. Many traditional culturally sacred areas were recognized by the Kumeyaay, and these locations continue to be held as sacred today.

The diet of the Kumeyaay included both plant and animal foods. There was considerable seasonality in the relative importance of plant versus animal food, and also the types of plant and animal foods. Nutritionally, the plant foods were high in fat, carbohydrates, and protein, and thus provided a high-energy diet. Some of the plants exploited for food included acorns, annual grass seeds, yucca, manzanita, sage, sunflowers, lemonade berry, chia, and various wild greens and fruits. None of these plants are available throughout the year; instead, they were only seasonally available. For example, elderberries are available during July and August, chia are available mainly in June, acorns in the fall only, and many grasses are summer and fall resources. Of course, if these resources were stored, they could be consumed throughout the year.

Given the general ethnohistoric accounts of the Kumeyaay, groups residing along the Otay River and its tributaries could have utilized several ecological niches varying by altitude. During early and mid-summer, subsistence activities could have focused on staple seed-bearing plants. Grasses would have been available in the coastal terraces, large inland valleys, and open upland settings. Important plant resources such as elderberries, chia, and manzanita were collected extensively during the summer months. Then settlements may have moved to the higher elevations, with the aggregation of families into larger groups for acorn harvests during the fall and winter months. Animal exploitation may have been most extensive during the months when plant resources were meager, and supplementary plant foods, including yucca and cactus, were also exploited seasonally as needed. Any coastal settlements could have supplemented these resources with shellfish and marine fish exploitation. The availability of these resources varied during the year (notably for fish) and from year to year (notably for the shellfish *Donax gouldii*) (Reddy 1996).

The ethnohistoric village of ‘Utay (Otay) is located approximately 6.5 mi. north of the Property. Otay is recorded as a major settlement within the larger district of Santo Domingo on the edge of Otay River, probably downstream from Otay Dam. The origin of the Kumeyaay name is uncertain, although it has been translated as a wide and level place or a brushy place (Stein 1975:94). Spanish contact with the people of Otay began at least as early as 1775, when several baptisms were performed. Over the next 43 years, 30 villagers were baptized, with the highest annual number of baptisms (three) occurring in 1797 and again in 1799. Family names associated with the village include Guesnac, Jallamac, Sinijan, and Singuatai. Otay villagers participated in the sacking of Mission San Diego de Alcalá in 1775, and three warriors were accomplices in the killing of the missionary Luis Jayme. While speculative, it appears that the archaeological work conducted by McGowan (1977;

McDonald et al. 1993) was associated with the village of Otay. If this is the case, this site represents one of the few Contact-period village sites that has been tested and reported. Large, relatively intact portions of this village site still exist.

4.1.2 Post-Contact

4.1.2.1 *Spanish Period*

Spanish explorer Juan Rodríguez Cabrillo first discovered California in 1542, claiming it for the King of Spain. More than two centuries later, Christian missionaries and soldiers made port and founded Mission San Diego de Alcalá in 1769, the first of 21 Spanish missions (1769-1823). Charged with converting pagan Indians to Christianity, the mission system and its soldiers would protect Spain's interest. Soldiers protected the mission from Presidio Hill, and the Franciscans first served the new mission by overseeing its operations and assumed control over the land. The mission system operated under the expectation that once the Indians had been Christianized and "civilized," the community would become a pueblo. In 1774, the presidio became a Royal Presidio, and the mission was relocated 10 km up the San Diego River. Some Indians had already been baptized, but others revolted in 1775 by burning the mission and killing a friar. The attack did not prompt any long-term changes to the mission system, but it heightened insecurities. Indians living near the mission complex continued to work the land, slowly transforming it into orchards (citrus and olive), vineyards, farm crops, and cattle ranch land. Indians in the backcountry, however, preferred to keep their distance from the mission to resist disease and retain their way of life (Engstrand 2005:50-54; Pourade 1960:xv, 18-19, 117; Robinson 1948:23-26).

4.1.2.2 *Mexican Period*

After a long struggle in Mexico, the Mexican War of Independence ended in 1821, severing the Spanish hold on the Californias. The San Diego area began transitioning from a religious and military outpost to a town. The mission movement was dwindling, as 17 of the oldest missions no longer had resident priests and the native population had drastically declined from the impact of Spanish occupation. The Mexican government continued to open up San Diego by retracting port restrictions, further expanding access to the port for the growing hide trade. Old Town became an important center for a decade, becoming a civilian town in 1834. By 1840, the town had fallen into disrepair, and many left the old, decaying pueblo (Engstrand 2005:56-57; MacPhail 1971; Mills 1968; Padilla-Corona 1997; Pourade 1960; Robinson 1948:23-72).

Land grants or ranchos largely characterize the Mexican period (1821-1848). Although some land had been granted to Indians, most of the land went to military men or merchants. A majority of ranchos were demarcated after secularization of mission land beginning in 1833, which prompted a rush for land grants. Land granted to Mexicans in California between 1833 and 1846 amounted to 500 ranchos,

primarily near the coast from San Francisco to San Diego. Hand-drawn maps or *diseños* indicated the often-vague boundaries of the grants where *dons* and *doñas* constructed adobe houses on their vast lands, cultivating the land and grazing cattle, often with the aid of *vaqueros*. Mexican Governor Pío Pico granted a great number of those ranchos prior to 1846, quickly carving up Alta California. Many of the Mexican land titles survived the U.S. victory in the Mexican-American War (1846-1848) (Christenson and Sweet 2008:7; Engstrand 2005:64-66; Robinson 1948:23-72).

4.1.2.3 *American Period*

Following the Mexican-American War, land ownership in California became more complicated, despite protection under the Treaty of Guadalupe Hildalgo of February 1848. Proof of rancho land ownership under the new government often meant years of effort to obtain a federal patent, and many rancheros had difficulty maneuvering through the process. Capitalizing on the uncertainty of those transitional years, Anglo settlers increasingly squatted on land that belonged to Mexicans and began challenging the validity of Spanish-Mexican claims through the Board of Land Commissioners (1851) (Garcia 1975:15-16, 22-24). Meanwhile, William Heath Davis' 1850 experiment to restart San Diego as a coastal New Town failed after a short period of time. Alonzo E. Horton's attempt at New Town in 1867 became the successful foundation for present-day downtown San Diego (MacPhail 1971; Mills 1968; Padilla-Corona 1997). An influx of Anglo squatters outside of New Town and new government taxes severely hindered *Californio* rancho owners, and by 1860, most did not retain their original land holdings. Unimproved farmland and substantial, often unconfirmed, ranchos characterized the largely uninhabited San Diego County (Garcia 1975:15-16, 22-24).

The confirmation of ranchos' boundaries in the late 1860s and early 1870s drew additional settlers as land became officially conveyable. Small farming communities were quickly established throughout San Diego County, and a completed second transcontinental railroad in November 1885 helped to initiate an unprecedented real estate boom for New Town that spilled over the county. Settlers poured into San Diego, lured by real estate promotions offering a salubrious climate, cheap land, and the potential to realize great profits in agriculture and real estate. Speculators formed land companies and subdivided town sites throughout the county, and settlers took up homestead claims on government land for both speculation and permanent settlement (Pourade 1964:167-191).

The first two decades of the twentieth century brought continuity and change to San Diego with a growing U.S. Navy and Army presence (Heilbron 1936:370, 431; U.S. Census Bureau 1920:82). Automobiles became increasingly popular as they became affordable, prompting San Diego County to grade roads to open up the backcountry (Etulain and Malone 1989:40; Kyvig 2004:27). Glenn H. Curtiss flew the first seaplane from North Island (1911), initiating a growing interest in aviation technologies in San Diego that would later be heightened by Charles Lindbergh's

historic flight on the *Spirit of St. Louis* from Rockwell Field in San Diego to St. Louis, Missouri (1927). Previously, in 1883, John Joseph Montgomery made the first manned heavier-than-air glider flight in the United States, two decades before the Wright Brothers, in the vicinity of the Areas of Potential Effect (APE) in Otay Mesa. A memorial to Montgomery (California Historical Landmark No. 711) was created within the Otay Mesa community (California State Parks 1996). In 1917, the U.S. Army established Camp Kearney as part of the nationwide defense campaign for World War I (Engstrand 2005). Brown Air Field, 1.5 mi. east of the APE, was opened by the U.S. Army as East Air Field in 1918, along with a U.S. Army aerial gunnery and aerobatics school. The U.S. Navy and the City of San Diego have subsequently owned the airfield, which is still in use today (City of San Diego n.d.).

San Diego County's greatest period of population growth in the first half of the twentieth century was between 1940 and 1950, when the county grew to 556,808 (U.S. Census Bureau 1940, 1950). It is also a period characterized by more people moving to rural areas instead of the city as rural population increased by 170.8 percent (U.S. Census Bureau 1950:5-12, 5-16, 5-21). At more than half a million people, San Diego had become a metropolis with attractive rural areas transitioning into new suburban communities. Yet the population of the county remained largely concentrated in and around the city of San Diego (Day and Zimmerman Report 1945:87-90).

4.1.3 Historic Overview of Furby-North Property

The Furby-North property straddles the border communities of San Ysidro and Otay Mesa with Otay Mesa Road serving as the main road linking these two communities with agricultural pasts. The following history provides an overview of how the Furby-North Property was used over time.

The Property is comprised of a large section of the E½ of Section 36, Township 18 South, Range 2 West and a small sliver of land in the W½ SW¼ of Section 31, Township 18 South, Range 1 West. A brief land use history shows how the two areas were used over time.

The General Land Office conducted surveys for Township 18 South, Range 1 West between 1853 and 1878, with township lines surveyed in 1854. Although these surveys can indicate land use, surveyors did not note a road or any structures in Section 31. Survey of Township 18 South, Range 2 West between 1854 and 1869 partially identified two trails in Section 36, one is likely the predecessor of present-day Otay Mesa Road and the other is a secondary northerly route (General Land Office 1869, 1878). Land in Section 36, Township 18 South, Range 2 West was patented as school grant land in 1870, when settlers began to cultivate homesteads in the Otay Mesa area (BLM 2011). By 1891, Herbert L. Barrows owned a majority of the E½ of Section 36 and James M. Kimley owned approximately 40 acres in the N½ NE¼. Four years later, Barrows remained as the property owner and the new owner of the 40 acres was H.D. Utley. The two remained land owners as of 1910

(Alexander 1910; San Diego County 1891, 1895). The SW¼ of Section 31, Township 18 South, Range 1 West was patented by Enoch Stevens under a Homestead Entry claim on November 16, 1891 (BLM 2011). By 1895, Stevens had sold most of the 160 acres to J.M. Robbins and retained 40 acres in the NE¼ SW¼. By 1910, A.C. Riordan acquired 173 acres that extended beyond the SW¼ of Section 31 (Alexander 1910; San Diego County 1891, 1895).

The western boundary of the Property was less than 0.5 mi. from the San Diego and Arizona Railroad, an alignment established by the National City and Otay Railroad (Alexander 1910). By at least 1904, present-day Otay Mesa Road served the Otay Mesa community, linking it with present-day San Ysidro and a railroad that could transport crops, such as hay, cattle, and passengers. A natural stream paralleled the main artery road. Another road split off of Otay Mesa Road in the NE¼ of Section 36, Township 18 South, Range 2 West, and provided settlers in Otay Mesa with access to Nestor, Palm City, and Otay from the west. A north-bound trail near the fork at Otay Mesa Road may have existed since at least the 1860s. The two main roads are adjacent to, but are outside, the project area and the pre-1860s trail may be within the boundary of the project area (USGS 1903, 1904). By 1909, the Little Landers community, now San Ysidro, had been established and in the next few decades the community expanded to the border as a result of its growing tourism industry. Otay Mesa Road was the main western connection between Otay Mesa and San Ysidro, with other interior road routes directly connecting Otay Mesa with the Otay River valley and with Mexico. Typical of the 1920s and thereafter, roads were improved for easier access and many tight turns were smoothed for easier automobile travel. By 1928, Otay Mesa Road and the Nestor/Palm City/Otay road had been graded and improved. Otay Mesa Road was clearly a well-traveled corridor for the Otay Mesa community since the road is wider than the Nestor/Palm City/Otay road. A secondary road that extends through the mid-section of the project area also paralleled a stream. A homestead with a large reservoir is evident in the W½ of Section 31, Township 18 South, Range 1 West, but it is outside the project area (Tax Factor 1928). By 1943, there were still three roadway options available at the Otay Mesa Road fork in the northwest portion of the project area. Otay Mesa Road was the only improved road and the northbound unpaved route had already been severed (USGS 1943).

A 1953 aerial shows some improvement within the northeastern portion of the project area, including a small residential or possibly industrial development, and a road across the northern section of the project area (Historic Aerials 1953). By 1964, it appears that the development could be a ranch or industrial in nature, possibly one of the recycling lots that developed around the greater Otay Mesa area around this time (Painter 1985). The main building had a large fenced area and there were several other buildings and vehicles located around the compound. A pond was also located nearby. A southbound road connected that property with another set of properties in the NE¼ of Section 1, Township 19 South, Range 2 West. Buildings were demolished thereafter, but the main building remained with new roads crisscrossing the property. Development around the Property was

minimal with signs of encroachment in 1971. By 1980, large industrial sites had been developed southwest and west of the Property. Housing tracts were notable southwest of the project area. From 1989 to 2003, significant development occurred around the property from Interstate 805 East with a multitude of roads crisscrossing the area, including the Property. During that time, Otay Mesa Road was widened from a four-lane street to six lanes from 0.5 mi. west of Interstate 805 to Harvest Road on the east side of Otay Mesa (Arner 2000; Historic Aerials 1964, 1968, 1971 1981, 1989, 2003, 2005).

4.2 Native American Consultation

ASM Associate Archaeologist Michelle Dalope contacted the Native American Heritage Commission (NAHC), on May 26, 2011, to request a search of their files for any recorded Traditional Cultural Properties or Native American heritage sites within 0.5 mi. of the project area. On May 26, 2011, Dave Singleton of the NAHC responded that no Native American cultural resources were known within or adjacent the project vicinity but that Native American cultural resources were present in proximity to the project area.

Mr. Singleton also provided a listing of all Native American tribal representatives who may have further knowledge of such sites within the project area. Subsequently, on May 27, 2011, Ms. Dalope contacted those tribal representatives by letter to solicit further information regarding known Traditional Cultural Properties and Native American heritage sites. To date, no responses to these letters have been received. Copies of all correspondence regarding Native American consultation for this study are provided in the confidential Appendix C.

In addition, Gabe Kitchen of Redtail Monitoring and Research, Inc. acted as the Native American representative during all field work within the project area.

4.3 Cultural Resource Descriptions

Six (6) cultural resources and one isolated artifact have been previously recorded within the Property. Two additional lithic scatters and two isolates were recorded during the 2011survey.

4.3.1 Prehistoric Resources

CA-SDI-8750

This site was recorded in 1981 by Apple and Olmo as a lithic scatter including felsite cores, debitage, and other flaked lithic tools within a 20-x-7-meter (m) area. The site was once again visited in 1984 by Desautels and Johnson, who stated that cores, scrapers, and debitage were recorded. During the current survey, ASM observed approximately 15 felsite debitage within the 20-x-7-m site area.

CA-SDI-8751

CA-SDI-8751 was first recorded by Apple and Olmo in 1981 as a lithic scatter located downslope on a knoll. It was recorded as consisting of three dozen artifacts including flakes, cores, and utilized lithic tools. The site was once again visited in 1984 by Desautels and Johnson who recorded fewer artifacts than originally recorded; artifacts included two cores, numerous flakes, and one utilized lithic tool. During the current survey, the two cores and utilized lithic tool were not relocated, although approximately 20 varied colored felsite flakes were observed.

CA-SDI-8752

This site was recorded as a small lithic scatter by Apple and Olmo in 1981 who recorded approximately 20-40 lithic artifacts, including cores and debitage, within a 2-x-2-m area. The site was once again visited in 1984 by Desautels and Johnson, and described as a felsite lithic scatter measuring 5 x 5 m. During the current survey, ASM observed two felsite flakes and one core. Visibility at the site was hampered by dense vegetation preventing the relocation of more artifacts.

CA-SDI-8753

CA-SDI-8753 was recorded in 1981 by Apple and Olmo as a light lithic scatter dispersed over a land slump. The artifacts consist of widely dispersed cores, debitage, and other flaked lithic tools. The site was resurveyed in 1984 by Desautels and Johnson and fewer artifacts were found than originally recorded. During the current survey, the site could not be relocated due to dense vegetation.

CA-SDI-10206

The site was first recorded in 1984 by Joines, Sinkovac, and Robbins-Wade as a small low-density lithic scatter. It was resurveyed in 2005 by RECON, who expanded the site boundaries as artifacts extended about 60 m up an adjacent dirt road. Artifacts included large secondary flakes, scrapers, and expended cores of fine-grained metavolcanic material. RECON stated that most of the artifacts were found in the dirt road, but that a small number were seen in the vegetation-covered areas on the side of the road. Dense vegetation obscured the ground surface and may have covered additional cultural material. RECON suggested that erosion along the road and road cuts from rains may have washed artifacts away from their original location. During this current survey, ASM observed over 30 widely dispersed artifacts within the road and surrounding area. Similar to the 2005 survey, visibility at the site was hampered by dense vegetation.

CA-SDI-20343

This prehistoric lithic scatter is comprised of four felsite flakes and one volcanic core within a 7-x-5-m area. The site is located on a slope approximately two (2) meters east of a dirt road. Visibility is poor due to the heavy vegetation in the area.

CA-SDI-20344

The site consists of a prehistoric lithic scatter identified on a slope on top of a ridge, south of a dirt road. Artifacts are comprised of five felsite flakes and two volcanic cores in a 10-x-20-m area.

Isolates

Iso-1

This prehistoric isolate consists of a single primary basalt flake.

Iso-2

This is a prehistoric isolate consisting of a primary basalt flake.

P-37-028469

This isolate consisted of one partial metate and a flake. These artifacts were not relocated during the current survey.

4.3.2 Historic Resources

P-37-031491

This site is located outside of, and adjacent to, the project area. Historic Otay Mesa Road is shown in its current alignment on topographic maps and aerial photographs as early as 1928. The road is shown on the 1904 USGS San Diego quad and the 1903 USGS Cuyamaca quad, based on 1902 surveys. On the 1904 map, a small portion of the road in the vicinity of Moody Canyon is slightly different from the later alignment, but the vast majority of the road is the same as later alignments. This road connected Otay Mesa to Nestor, South San Diego, and the Tijuana (Tia Juana) River Valley. Prior to the construction of Interstate 805, the road ended at the railroad. Due to the construction of Interstate 805, the road now turns south, in the area of another old road, which is shown as a trail on the 1904 map. Remnants of Historic Otay Mesa Road west of the interstate are still shown as unpaved roads on the 1975 USGS map.

Multi-Component Sites

CA-SDI-11079

CA-SDI-11079 was first recorded in 1988 by Pigniolo as a temporary camp or habitation site extending over a 225-x-200-m area. Pigniolo conducted limited subsurface testing and recovered a range of artifacts including three scraper planes, 10 cores, one domed ovate scraper, five flake tools, two hammerstones, one mano, and over 200 flakes. The site was evaluated in 1993 and 1994 by Gallegos and Associates, and a 1,500-m^2 portion of the site was found significant under City of San Diego and CEQA guidelines, but not significant under City of San Diego RPO. The site was subsequently determined eligible for listing in the National Register of Historic Places (NRHP) and received a National Register Status of 2S2. Gallegos & Associates completed a data recovery program in 1998. A series of mechanical trenches and 43 1-x-1-m units were excavated. Radiocarbon analysis of six *Olivella* sp. shell beads and one abalone shell provided dates for site occupation ranging between 7,000 and 9,400 years ago.

A small portion of the recorded site boundary is within the project area, but no artifacts were found during this current survey. The area has been graded and is now an empty lot. During the current survey prehistoric and historic artifacts were recorded to the south and downslope of the recorded boundaries of CA-SDI-11079. Pigniolo's 1988 site record indicates that the site boundaries he had defined were confined to his survey area, but that it appeared that the site extended to the east and south. The prehistoric component identified during the current survey consists of a large dispersed lithic scatter, comprised of approximately 50 felsite and basalt flakes, one volcanic scraper, and two felsite cores. The newly identified site area also contains a historic component which consists of limited range of glass and ceramic artifacts. Surface artifacts noted include: a fragment of clear glass embossed with "Full ½ Pint"; the bottom of a glass bottle with a possible Anchor Hocking maker's mark (1938-1970); a cobalt glass fragment embossed with the letter V (Vitro Corporation, Monterrey, Mexico, no date); a cobalt glass fragment embossed with "More"; a small clear medicine bottle; approximately three cobalt glass fragments; over 15 plain porcelain plate sherds; one bottle top; approximately 10 fragments of green glass from a 7-UP bottle; over 20 fragments of brown beer glass; approximately 30 fragments of clear glass, and a wooden post with three-string barbed wire. The new locus of CA-SDI-11079 measures 90 m east-west and 40 m north-south.

4.4 Resource Significance

Cultural resource regulations that apply to the project area are the City of San Diego Resource Protection Ordinance, San Diego County Local Register of Historical Resources (Local Register), California Environmental Quality Act, and provisions for the California Register of Historic Resources. Table 5 summarizes the current significance status of the cultural resources within the Property.

Table 5. Significance Status of Cultural Resources within the Property

Resource Designation	Era	Site Contents	CRHR Eligibility Status
Newly Recorded Sites			
CA-SDI-20343	Prehistoric	Lithic scatter	Not evaluated
CA-SDI-20344	Prehistoric	Lithic scatter	Not evaluated
Previously Recorded Sites			
CA-SDI-8750	Prehistoric	Lithic scatter	Not evaluated
CA-SDI-8751	Prehistoric	Lithic scatter	Not evaluated
CA-SDI-8752	Prehistoric	Lithic scatter	Not evaluated
CA-SDI-8753	Prehistoric	Lithic scatter	Not evaluated
CA-SDI-10206	Prehistoric	Lithic scatter	Not evaluated
CA-SDI-11079	Prehistoric and Historic components	Prehistoric habitation site/ Historic refuse scatter	Portion of the site outside the Furby-North property is eligible to the NRHP and CRHR. It is not significant under City of San Diego RPO. Portion inside the property has not been evaluated.
Previously Recorded Isolates			
P-37-028469	Prehistoric	Lithic isolate	Ineligible
Newly Recorded Isolates			
Iso-1	Prehistoric	Lithic isolate	Ineligible
Iso-2	Prehistoric	Lithic isolate	Ineligible

5.0 RESOURCE MANAGEMENT

5.1 Management Goals and Objectives

Management of the natural and cultural resources within the Property will be guided by the goals and objectives of the MSCP and the City's MSCP Subarea Plan.

5.1.1 San Diego City MSCP Subarea Plan Goals

The MSCP Plan and the City's MSCP Subarea Plan provide both general and segment-specific goals and objectives. The Property is located within the Otay Mesa Area of the City's MSCP Subarea Plan and, as discussed in Section 3.4, contributes to core habitat located on the southern portion of a designated wildlife linkage. The linkage connects the southernmost conserved lands in Otay Mesa Area to the northern most conserved lands. The wildlife linkage runs across Highway 905 to the east of the Property.

The goal for this area is a network of open and relatively undisturbed canyons containing a full ensemble of native species and providing functional wildlife habitat and movement capability. The overall MSCP goal is to maintain and enhance biological diversity in the region and conserve viable populations of endangered, threatened, and key sensitive species and their habitat, thereby preventing local extirpation and ultimate extinction.

In order to assure that the goal of the MHPA is attained and fulfilled, management objectives for the City of San Diego MHPA are as follows:

1. To ensure the long-term viability and sustainability of native ecosystem function and natural processes throughout the MHPA.
2. To protect the existing and restored biological resources from disturbance-causing or incompatible activities within and adjacent to the MHPA while accommodating compatible public recreational uses.
3. To enhance and restore, where feasible, the full range of native plant associations in strategic locations and functional wildlife connections to adjoining habitat in order to provide viable wildlife and sensitive species habitat.
4. To facilitate monitoring of selected target species, habitats, and linkages in order to ensure long-term persistence of viable populations of priority plant and animal species and to ensure functional habitats and linkages.
5. To provide for flexible management of the preserve that can adapt to changing circumstances to achieve the above objectives.

5.1.2 Management Directives and Implementation Measures

Based on the above goals and objectives, recommended management directives have been identified. The management directives provided herein have been designated as Priority 1 or Priority 2. This designation recognizes the fact that many of the directives cannot be immediately implemented, but instead will occur over the life of the City's MSCP Sub-area Plan. Priority designations are as follows:

Priority 1: Directives that protect the resources in the Property and the MHPA, including management actions that are necessary to ensure that covered species are adequately protected.

Priority 2: Directives other than those required for covered species and other long-term items that may be implemented during the life of the City's MSCP Sub-area Plan as funding becomes available.

This RMP includes management directives and implementation measures to meet City of San Diego MSCP Subarea Plan goals and objectives under the following elements: (A) Biological Resources, (B) Vegetation Management, (C) Public Use, Trails, and Recreation, (D) Operations and Facility Maintenance, and (E) Cultural Resources.

5.2 Biological Resources Element (A)

5.2.1 Biological Monitoring

Biological monitoring will be performed onsite to gather information that will assist DPR in making land management decisions to conform to MSCP goals and objectives, as well as DPR objectives. The biological monitoring that will occur will be designed to guide decisions at the individual preserve level. The first year of monitoring has been conducted (inventory surveys) and the results are included as Appendix B. Additional monitoring results will be incorporated into stand alone monitoring reports. These reports may recommend revisions to the management directives contained within this RMP.

The key to successful monitoring at the individual preserve level, such that data gathered is not duplicative and meets individual preserve level objectives, is close coordination with stakeholder groups that are performing subregional monitoring, sharing of data, future plans and schedules and keeping abreast of monitoring methods as they are developed. To ensure uniformity in the gathering and treatment of data, a San Diego Association of Governments (SANDAG) land management working group has been formed, San Diego Management and Monitoring Program (SDMMP), this working group assists jurisdictions in coordinating monitoring programs, analyzing data, and providing other information and technical assistance such as a regional database website. DPR has been working closely with this group and attending monthly meetings regarding current

management and monitoring actions. SANDAG is currently drafting new monitoring survey protocols for the MSCP Plan covered plant species. DPR will review the new monitoring survey protocols and implement these methods within the Property when finalized. In addition, SDMMP is currently evaluating a regional wildlife movement study and monitoring protocol combining genetic studies with field data collection methods. This protocol will be reviewed with relevance to the Property.

DPR will follow the habitat- and species-specific monitoring requirements outlined in Table 3-5 of the Multiple Species Conservation Program MSCP Plan (City of San Diego 1998). Additionally, DPR will follow USGS rare plant monitoring protocols (McEachern et al. 2007), San Diego State University habitat and vegetation community monitoring protocols (Deutschman et al. 2009) and USFWS wildlife monitoring protocols (USFWS 2008). These references will assist DPR in developing monitoring methods at the preserve level, as well as the management directives that are identified for specific species in this document.

Management Directive A.1 – Conduct habitat monitoring to ensure City of San Diego MSCP Subarea Plan goals and DPR objectives are met (*Priority 1*)

***Implementation Measure A.1.1*:** DPR will conduct habitat monitoring for jojoba-San Diego sunflower association (equivalent to Holland's *maritime succulent scrub*) and other habitat types within the Preserve at five-year intervals. An updated vegetation community map will be developed utilizing the Vegetation Classification Manual (AECOM et.al. 2011). On-going monitoring within the Property will identify any adverse changes in vegetation community distribution and habitat quality, such as changes from fire, invasion by non-natives or decline of existing species, and indicate if modifications to current management actions are needed. More frequent monitoring may be required following significant fire within the Property. The main product of this monitoring will be a report which will include a discussion of monitoring objectives, monitoring methods to meet those objectives and an updated vegetation community map (see Implementation Measure A.3.1 below).

***Implementation Measure A.1.2*:** DPR will conduct general wildlife and rare plant surveys at five-year intervals utilizing and refining baseline monitoring methods to facilitate trend and distribution status analysis. This information will be included in the monitoring report.

***Implementation Measure A.1.3*:** DPR will conduct monitoring for invasive plant species at five-year intervals to assess invasion or re-invasion by invasive, non-native plant species within the Property. Surveys will be focused in areas where invasive, non-native plants have been detected in the past and in the vicinity of special-status species, but will also look for new occurrences in the Property. The surveys will document the location of invasive, non-native plants and quantify the numbers/acreages of individual

species within the Property. This information will be included in the monitoring report.

Management Directive A.2 – Meet the corridor monitoring requirements of the MSCP (*Priority 2*)

As discussed in Section 3.4.1, the Property contributes to core habitat located on the southern portion of the City of San Diego MSCP Subarea plan Otay Mesa designated wildlife linkage. The linkage connects the southernmost conserved lands in Otay Mesa Area to the northern most conserved lands through a narrow connection to the east of the Property. However, the Property is surrounded by urban development to the north, south and west and wildlife movement on and off the Property would only occur between the Property and contiguous open space land to the east and northeast. While corridor monitoring within the Property will take place at the preserve-level, it anticipated that it will provide data for better understanding wildlife movement on a regional scale.

***Implementation Measure A.2.1*:** DPR will conduct corridor monitoring at five-year intervals to determine movement into contiguous open space to the north and northeast in conjunction with habitat monitoring, and general wildlife and rare plant surveys (see Implementation Measures A.1.1 & A.1.2). The scope of monitoring will be sufficient to determine if corridors are being utilized, but not to determine the extent of use (i.e., how many individuals of any given species use a corridor).

Management Directive A.3 – Preparation of biological monitoring report (*Priority 1*)

***Implementation Measure A.3.1*:** DPR will prepare a biological monitoring report that summarizes the monitoring goals, objectives, methodology and results of the biological monitoring efforts described in implementation measures A.1.1 to A.1.3 and A.2.1. The report will also address the effectiveness of current stewardship and management actions, identify the need for corrective actions, and include recommendations for adaptive management.

5.2.2 City of San Diego MSCP Subarea Plan Covered Species-Specific Monitoring and Management

Not all species occurring within the Property are expected to require species-specific management. It is expected, rather, that the general management directives and implementation measures outlined under the Biological Resources and Vegetation Management elements are sufficient to protect and manage optimal habitat conditions for most, if not all, species to maintain and/or thrive within the Property. However, there are some special-status species listed as MSCP-covered species, require additional measures. Table 3-5 of the Subregional MSCP Plan (City of San

Diego, 1998) provides specific management and/or monitoring measures that are conditions of coverage for City of San Diego MSCP Subarea Plan-covered species.

In addition, in the document *San Diego Multiple Species Conservation Program Covered Prioritization* (Regan et al., 2006), SDSU has prioritized the MSCP-covered species for monitoring. The species were classified as Risk Group 1 (most endangered), Risk Group 2 (moderately endangered), and Risk Group 3 (less endangered). Next, the threats/risk factors facing the species were identified and ranked as high, moderate, or low degree of threat to the species. Only management conditions addressing high and moderate threats for Risk Group 1 species will be discussed in this RMP. One Risk Group 1 species is currently present on the Property; coastal cactus wren.

Management Directive A.4 - Comply with applicable conditions of coverage for City of San Diego MSCP Subarea Plan Covered Species (*Priority 1*)

DPR will implement habitat based and, in some cases, species specific monitoring and management as outlined in Table 3-5 of the City MSCP Subarea Plan and *San Diego Multiple Species Conservation Program Covered Prioritization* (Regan et al., 2006) for all City of San Diego MSCP Subarea Plan Covered Species detected within the Property.

In order to avoid repetition, the following is a list of common risk/threats to City MSCP Subarea Plan Covered Species that are found to benefit from habitat based management and the corresponding management directives or implementation measures to address these factors:

- ***Invasive non-native plants*:** Implementation measure A.1.3 and management directives B.2 and B.3.

- ***Invasive non-native animals*:** Multiple implementation measures under management directive A.5.

- ***Wildfires*:** Multiple implementation measures under management directive B.4.

- ***Edge effects*:** Multiple implementation measures under management directives D.7.

Coast barrel cactus (*Ferocactus viridescens*)

Monitoring: Table 3.5 – Habitat Based and Photo Plot, SDSU - Risk Group 3

Monitoring efforts include habitat monitoring (as described in implementation measures A.1.1 and A.1.2).

Management Conditions: Table 3-5 states area specific management directives must include measures to protect this species from edge effects and unauthorized collection; directives should also include appropriate fire management/control practices to protect against a too frequent fire cycle. Edge effects are addressed through implementation measure C.5.1 and multiple implementation measures under management directives D.6 and D.7. Fire management is addressed through implementation measures under management directive B.4.

Snake cholla (*Cylindropuntia californica* var. *californica* [*Opuntia parryi* var. *serpentine*])

Monitoring: Table 3.5 – Area Specific Management Directives, SDSU - Risk Group 2

Monitoring efforts include habitat monitoring (as described in implementation measures A.1.1 and A.1.2).

Management Conditions: Table 3-5 states area specific management directives must include specific measures to protect against detrimental edge effects to this species. Edge effects are addressed through implementation measure C.5.1 and multiple implementation measures under management directives D.6 and D.7.

Coast horned lizard (*Phrynosoma cornonatum*)

Monitoring: Table 3-5 - Site Specific, SDSU - Risk Group 3

Monitoring efforts will include habitat monitoring and general wildlife surveys (as described in implementation measures A.1.1 and A.1.2).

Management Conditions: Table 3-5

Area-specific management directives must include specific measures to maintain native ant species, discourage the Argentine ant, and to protect against detrimental edge effects to this species.

No Argentine ants were observed within the Preserve in 2011; however, future detection will be addressed by general wildlife surveys (as described in implementation measure A.1.2). Edge effects are addressed through multiple implementation measures under management directives D.7 and D.8.

Orange-Throated Whiptail (*Cnemidophorus hyperythrus beldingi*)

Monitoring: Table 3-5 - Site Specific, SDSU - Risk Group 3

Monitoring efforts will include habitat monitoring and general wildlife surveys (as described in implementation measures A.1.1 and A.1.2).

Management Conditions: Table 3-5

The management approach for this species is maintenance of suitable habitat (chaparral, sage scrub and grassland) within the Preserve. These habitats will be managed to reduce the threat of fire and invasive non-native species. In addition, management of these habitats also addresses edge effects as a condition of Table 3-5.

Coastal California Gnatcatcher (*Polioptilia californica californica*)

Monitoring: Table 3-5 – Area Specific Management Directives, SDSU – Risk Group 2

Implementation Measure A.4.1: DPR will conduct focused surveys prior to restoration or enhancement for California gnatcatcher in all suitable habitats on the Property to establish a baseline, identify all locations of the California gnatcatcher, and determine whether the species is breeding on-site. If feasible, baseline surveys will include annual surveys for three years to capture the natural fluctuation of this species on-site. Follow up surveys will be conducted post restoration to aid in determining effectiveness. Long-term monitoring will be conducted thereafter every five years in conjunction with Implementation Measure A.1.2.

Management Conditions: Table 3-5

Area Specific Management Directives must include measures to reduce edge effects and minimize disturbance during the nesting period, fire protection measures to reduce the potential for habitat degradation due to unplanned fire, and management measures to maintain or improve habitat quality including vegetation structure. No clearing of habitat within the cities MHPAs and within the County's Biological Resource Core Areas may occur between March 1 and August 15.

Edge effects are addressed through implementation measure C.5.1 and multiple implementation measures under management directives D.6 and D.7. Fire management is addressed through implementation measures under management directive B.4. Active revegetation is proposed for the on-site

coastal sage scrub (see implementation measure B.1.2 below). DPR will avoid impacts to any on-site occupied habitat.

Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*)

Monitoring: Table 3-5 – Site Specific and Management Plans/Directives, SDSU – Risk Group 1

Implementation Measure A.4.2: DPR will conduct focused surveys prior to restoration or enhancement for coastal cactus wren in all suitable habitats on the Property to establish a baseline, identify all locations of the cactus wren, and determine whether the species is breeding on-site. If feasible, baseline surveys will include annual surveys for three years to capture the natural fluctuation of this species on-site. Follow up surveys will be conducted post restoration to aid in determining effectiveness. Long-term monitoring will be conducted thereafter every five years in conjunction with Implementation Measure A.1.2.

Management Conditions: Table 3-5

Area Specific Management Directives must include restoration of maritime succulent scrub habitat, including propagation of cactus patches, active/adaptive management of cactus wren habitat, monitoring of populations within the preserves, and specific measures to reduce or eliminate detrimental edge effects. No clearing of occupied habitat may occur from the period February 15 through August 15.

Restoration of maritime succulent scrub habitat, including propagation of cactus patches and active/adaptive management of cactus wren habitat is addressed through implementation measures B.1.1 and B.2.1. Monitoring of populations within the Property is addressed through implementation measure A.4.2 above. Specific measures to reduce or eliminate detrimental edge effects are addressed through implementation measures under management directives D.7 and D.8. DPR will avoid impacts to any on-site occupied habitat.

Northern Harrier (*Circus cyaneus*)

Monitoring: Table 3-5 - Habitat Based, SDSU - Risk Group 3

Monitoring efforts include habitat monitoring and general wildlife surveys (as described in implementation measures A.1.1 and A.1.2).

Management Conditions: The management approach for this species is maintenance of suitable habitat (open sage scrub and grassland) within the Property. These habitats will be managed to reduce the threat of fire and

invasive non-native plants. In addition, management of these habitats will include 900-foot impact avoidance areas around any active nests as a condition of Table 3-5.

No nesting territories were observed within the Property during the 2011 surveys; however future detection will be addressed through general wildlife surveys (as described in implementation measure A.1.2).

Southern California Rufous-Crowned Sparrow (*Aimophila ruficeps canescens*)

Monitoring: Table 3-5 - Habitat Based, SDSU - Risk Group 3

Management Conditions: Table 3-5 states area-specific management directives must include maintenance of dynamic processes, such as fire, to perpetuate some open phases of coastal sage scrub with herbaceous components.

Southern California rufous-crowned sparrows were detected within the jojoba-San Diego sunflower association on-site, the most prevalent vegetation type on the Property. Currently, this habitat has open areas within the Property needed by southern California rufous-crowned sparrow.

American Badger (*Taxidea taxus*)

Monitoring: Table 3-5 - Habitat Based, SDSU - Risk Group 3

Monitoring efforts will include habitat monitoring and general wildlife surveys (as described in implementation measures A.1.1and A.1.2). During the general wildlife surveys the potential badger den identified on-site will be revisited and badger sign will be recorded. In addition, concurrent with large mammal monitoring (as described in implementation measure A.2.1), a wildlife camera will be placed in the vicinity of the den.

Monitoring was performed on the Property in 2011 by U.S. Geological Survey Western Ecological Research Center to identify badger locations through canine detection and analysis of scat. The previously identified burrow was found and one old scat was collected for analysis. The first round of testing did not identify the scat as badger. A second round of analysis is currently being performed.

Management Conditions: Area Specific Management Directives must include measures to avoid direct human impacts to this species if it is present or likely to be present.

The badger den identified on-site was located in an area of dense cholla cactus. Because of this location, human disturbance is expected to be low. Any human disturbance will be noted during monitoring surveys.

Management Directive A.5 - Provide management and monitoring of other special-status species (Lists A and B of County Sensitive Plant List) (*Priority 1*)

List A and B species are considered rare, threatened or endangered in California. The general management directives and implementation measures outlined in this RMP are intended to be adequate for the conservation of these species, and the County will monitor these species to ensure this is the case. Monitoring efforts for List A and List B plants will include the monitoring described in the implementation measure below.

***Implementation Measure A.5.1*:** DPR will conduct surveys of County List A and List B plant species, not covered by the MSCP, within the Property including south coast saltbush, San Diego bur-sage, and cliff spurge. Surveys will document the locations of species populations, and quantify the number of individuals and/or the acreage of these populations. These surveys will be conducted at five-year intervals in conjunction with habitat monitoring (refer to implementation measure A.1.1).

5.2.3 Non-Native and/or Invasive Wildlife Species Control

Management Directive A.6 – Reduce, control, or where feasible eradicate non-native and/or invasive wildlife known to be detrimental to native species and/or the local ecosystem (*Priority 2*)

As discussed in Section 3.3.4, no non-native and/or invasive species of management concern were detected within the Property. Although not observed within the Property, Argentine ant is an invasive, non-native species known to adversely affect sensitive species that occur within the Property.

***Implementation Measure A.6.1*:** DPR will conduct surveys for the presence of non-native and/or invasive wildlife species of management concern, including Argentine ants, at five-year intervals in conjunction with habitat monitoring and general wildlife surveys (see A.1.1 & A.1.2).

5.2.4 Future Research

The MSCP Plan preserve presents a rich array of research opportunities for the academic and professional communities, primarily in disciplines related to biology, ecology, and natural resources management, but also ranging to environmental design, sociology, and park use and administration. The City encourages research within the MHPA in order to gain valuable information unavailable through other

means. There are a multitude of unanswered questions posed by the development of a multiple species and habitat system where little literature or previous research exists on the majority of species inhabiting the region. In addition, research on vegetation associations and habitats, natural regeneration, restoration, fragmentation, edge effects, genetics, viability, predation, wildlife movement, and much more, would be useful to provide information on the health and dynamics of this open space system as well as how to improve conditions.

Current research at the Property includes badger surveys to monitor regional-scale connectivity and cactus wren surveys to evaluate the degree of genetic connectivity among cactus wren populations in San Diego County and to study fledgling dispersal.

Management Directive A.7 – Allow for future research opportunities within the Property (*Priority 2*)

> ***Implementation Measure A.7.1*:** DPR will accept and review proposals for scientific research, monitoring, and habitat restoration and enhancement activities which are permitted within the MHPA. Proposed research activities will be subject to approval by DPR. All such activities must obtain any necessary permits and shall be consistent with this RMP. Additionally, any person conducting research of any kind within the Property shall obtain a Right-of-Entry Permit from DPR, which will outline the precautions to be taken to preserve and protect sensitive biological and cultural resources within the Property, and require results of any research to be made available to DPR.

5.3 Vegetation Management Element (B)

5.3.1 Habitat Restoration

Habitat restoration is not typically required by the City of San Diego MSCP Subarea Plan, but is encouraged if resources are available.

Management Directive B.1 – Restore degraded habitats to protect and enhance populations of rare and sensitive species (*Priority 1*)

> ***Implementation Measure B.1.1*:** Explore opportunities to enhance the small patch of highly disturbed cholla on the north end of the Property just west of the vernal pool complex by removing short-pod mustard and yellow star thistle (see Implementation Measure B.2.2 below) and then planting prickly pear, lemonadeberry and additional cholla. Restoration activities will utilize current, accepted techniques and avoid/minimize impacts to sensitive species or native habitats.
>
> ***Implementation Measure B.1.2*:** Explore active revegetation opportunities within the two areas of coastal sage scrub vegetation communities on-site.

Restoration activities will utilize current, accepted techniques and avoid/minimize impacts to sensitive species or native habitats. Proposed revegetation activities will use only local native species.

Implementation Measure B.1.3: Explore active revegetation opportunities within the urban/developed areas in the southern portion of the Property. These areas will be revegetated with maritime succulent scrub. Restoration activities will utilize current, accepted techniques and avoid/minimize impacts to sensitive species or native habitats. Proposed revegetation activities will use only local native species.

Implementation Measure B.1.4: As I-138 mitigation requests are made to DPR, DPR will conduct focused surveys for vernal pool associated plant and animal species to confirm the quality and restoration potential of the pool located in the vernal pool complex in the north-eastern portion of the Property.

Implementation Measure B.1.5: The Biological Diversity Report for the Property states that there is a current need for active restoration for unauthorized trails within the Property (TAIC 2011). Prior to restoration activities, the closed trails will be decompacted (e.g., ripped to a depth or 18 inches) wherever site topography and soil conditions permit. The trails will then be imprinted with a local, native coastal sage scrub seed mix. Soil stabilization methods using bio-engineering techniques and natural materials (e.g., coconut fiber rolls and bonded fiber matrices [BFM]) will be applied to stabilize soils and prevent erosion. Any seed materials will be thoroughly inspected and all non-native or unidentifiable seed material removed to avoid potential contamination.

5.3.2 Invasive, Non-Native Plant Species Removal and Control

Management Directive B.2 – Reduce, control, or where feasible eradicate non-native plants that are known to be detrimental to native species and/or the local ecosystem (*Priority 1*)

As described in Section 3.2.4, there are three herbaceous species in particular that occur in significant and extensive stands on the Property: garland chrysanthemum; Malta starthistle and short-pod mustard. Garland chrysanthemum poses the most immediate threat to the Property. In addition, the Property has a high cover of non-native grasses, such as wild oats and brome grasses which are difficult to control.

***Implementation Measure B.2.1*:** DPR staff will coordinate with the County of San Diego Department of Environmental Health to treat stands of garland chrysanthemum with herbicide (e.g., Transline) early in the season (e.g., prior to seed-set) followed by active revegetation (implementation measure B.1.3), to ensure this species does not recolonize.

Implementation Measure B.2.2: DPR staff will coordinate with the County of San Diego Department of Environmental Health to treat the patches of Malta starthistle and short-pod mustard that were identified during the 2011 biological resources inventory surveys. Malta starthistle will be treated with appropriate herbicide from December through April during the seedling to early rosette stage. Habitat will be allowed to passively restore after treatment, except the area just west of the vernal pool complex that will potentially be actively restored (see Implementation Measure B.1.1 above).

Implementation Measure B.2.3: The main east-west unpaved access road will be considered a high priority area by DPR staff for monitoring of invasive non-native plants because vernal pools and sensitive plant species occur along the edges of the road. In addition, the snake cholla in the southwest area of the Property which supports cactus wren will also be monitored closely by DPR staff for invasive non-native plant species.

***Implementation Measure B.2.4*:** DPR will assess and pursue mitigation opportunities that implement invasive, non-native plant removal within the Property. Precedence will be given to those areas occupied by species identified as high priority, followed by moderate and then low priority species.

Management Directive B.3 – Manage and minimize the expansion of invasive, non-native plants within the Property (*Priority 2*)

***Implementation Measure B.3.1*:** DPR will implement an educational program for adjacent residents in order to discourage the introduction of invasive, non-native plants into the Property. Provided information will discuss invasive plants harmful to the Property, and prevention methods. The program may also encourage residents to voluntarily remove invasive, non-native plants from their landscaping. See also implementation measure D.7.1.

5.3.3 Fire Prevention, Control, and Management

There are no current fire management activities within the Property. Adequate emergency access roads are found within the Property in the form of existing trails/dirt roads. As described in Section 2.3.4, the Property is classified as Very High Fire Severity Zones by the City of San Diego Fire Department (Otay Mesa).

Management Directive B.4 – Provide for necessary fire management activities that are sensitive to natural and cultural resources protection (*Priority 1*)

***Implementation Measure B.4.1*:** The existing east-west dirt road within the Property acting as an access road will be maintained annually to keep it fuel free. In addition, DPR will continue to coordinate with CAL FIRE and the City of San Diego Fire Department including the San Ysidro Fire Station 29, to determine

what improvements need to be made to make fire response feasible throughout the Property.

***Implementation Measure B.4.2*:** Based on analysis, vegetation management beyond invasive non-native plant removal is not a current need within the Property to address wildfire issues. The need for vegetation management will be assessed through implementation measure A.1.1. DPR will coordinate with CAL FIRE and the City of San Diego Fire Department including the San Ysidro Fire Station 29 to assess the future need to develop an integrated Vegetation Management Plan (VMP) that will allow environmental documentation for strategic fuels management to be conducted when needed. The VMP will also identify likely locations for equipment staging areas and fire breaks, assisting fire fighting activities to avoid sensitive species and known cultural sites, if feasible. In addition, the VMP will include post-fire management activities to enhance natural plant recovery and succession, restore long-term ecosystem health and processes, and minimize impacts to sensitive biological and cultural resources.

5.4 Public Use, Trails, and Recreation Element (C)

5.4.1 Public Access

DPR will be utilizing the Property as mitigation for public and private projects in accordance with the County of San Diego Board Policy I-138, so the Property will not be opened for public use. Currently, evidence of unauthorized use is apparent from the existing unofficial trail network within the Property.

Management Directive C.1 – Limit types of public uses to those that are appropriate for the Property (*Priority 1*)

***Implementation Measure C.1.1*:** Park Rangers will patrol and monitor the Property for any unauthorized public access. Park Rangers will document any illegal access and use of the Property, and inform any unauthorized persons observed on site that the Property is not open to the public and request that they leave.

***Implementation Measure C.1.2*:** Park Rangers will enforce the following prohibited uses and restrictions within the Property. Park rangers may call the sheriff for legal enforcement, as appropriate.

a. Off-road or cross-country vehicle and public off-highway recreational vehicle activity are considered incompatible uses in the MSCP preserve, and are therefore prohibited in the Preserve, except for law enforcement, Preserve management, and/or emergency purposes.
b. Hunting or discharge of firearms is an incompatible use in the MSCP preserve, and is therefore prohibited in the Property, except for law enforcement, and/or emergency purposes.

c. Poaching or collecting plant or animal species, archaeological or historical artifacts or fossils from the Preserve is generally prohibited; however, the County may authorize collecting upon approval for scientific research, revegetation or restoration purposes, or species recovery programs. In addition, impacts to historic features are prohibited except upon approval by the County.

d. Camping (including homeless and itinerant worker camps)

e. Feeding wildlife

f. Domestic animals

g. Smoking

h. Campfires/Open Flames

i. Littering/Dumping

***Implementation Measure C.1.3*:** Park Rangers will ensure that prohibited uses are clearly specified on posted signage.

Management Directive C.2 – Manage access in sensitive biological and cultural resource areas within the Property (*Priority 1*)

***Implementation Measure C.2.1*:** DPR has identified and mapped sensitive vegetation communities, special-status plant and wildlife species (including narrow endemics and County-listed species), and cultural sites in the Property so that these areas can be avoided and/or monitored. Updated information on sensitive resources in relation to access points (i.e., existing access roads and unofficial trails) will be obtained in conjunction with routine monitoring activities (see implementation measures A.1.1, A.1.2, C.5.1 and E.1.3).

5.4.2 Fencing and Gates

Currently, there is fencing around the City of San Diego communications tower in-holding and in short sections along the eastern and southwestern boundaries of the Property. There is an existing vehicle gate on the western boundary of the Property off of Otay Mesa Boulevard (Figure 7). This gate is maintained by DPR.

Off-road vehicle use, specifically motocross bikes, is currently a problem within the Property and especially just off-site to the southeast on adjacent properties where such activity has removed a significant amount of vegetation. Other unauthorized trails on-site seem to have been formed by migrants and include evidence of migrant camps.

Management Directive C.3 – Install and maintain fencing and gates within the Property (*Priority 1*)

***Implementation Measure C.3.1*:** DPR will install fencing and/or gates at major access points to restrict unauthorized access and protect sensitive resources from impacts. Fences and gates will be designed and located so they do not impede wildlife movement or impact cultural resources.

***Implementation Measure C.3.2*:** Park Rangers will regularly inspect and maintain all installed fencing and gates within the Property. Fencing segments and gates will be repaired or replaced as necessary.

5.4.3 Trail and Access Road Maintenance

DPR will be utilizing the Property as mitigation for public and private projects in accordance with the County of San Diego Board Policy I-138, so the Property will not be opened for public use. However, an east/west unpaved access road is present in the northern portion of the Property, which is currently used by City of San Diego staff to access their communication tower complex and DPR staff for management and patrolling purposes. Caltrans has requested a right-of-entry permit from DPR to utilize this unpaved road to access their mitigation site east of the Property.

Management Directive C.4 – Properly maintain access road for user safety, and to protect biological and cultural resources (*Priority 1*)

***Implementation Measure C.4.1*:** Park Rangers will monitor the existing east/west dirt road in the northern area of the Property currently used for management purposes for degradation and off-road access and use. Park Rangers will provide any necessary repair/maintenance as needed.

5.4.4 Signage

Currently, “No Trespassing” signs are posted at the Property.

Management Directive C.5 – Install and maintain appropriate signage to effectively communicate Property rules and regulations (*Priority 1*)

***Implementation Measure C.5.1*:** Park Rangers will install the following signs on the Property; Off-roading and ATV Vehicles Prohibited 41.130 and 76.101(a) and No Dumping.

Implementation Measure C.5.2: Park Rangers will regularly inspect and maintain all posted signs within the Property in good condition. Signs will be kept free from vandalism and will be repaired or replaced as necessary.

5.5 Operations and Facility Maintenance Element (D)

5.5.1 Litter/Trash and Materials Storage

Management Directive D.1 – Maintain a safe and healthy environment within the Property (*Priority 1*)

***Implementation Measure D.1.1*:** DPR will prohibit the permanent storage of hazardous and toxic materials within the Property. Any temporary storage must be in accordance with applicable regulations, and otherwise designed to minimize any potential impacts.

Management Directive D.2 – Enforce regulations regarding littering/dumping (*Priority 1*)

***Implementation Measure D.2.1*:** Park Rangers will enforce regulations regarding littering/dumping (County Code of Regulatory Ordinance Section 41.116). Penalties for littering and dumping will be imposed by law enforcement officers sufficient to prevent recurrence and reimburse costs to remove and dispose of debris, restore the area if needed, and pay for additional DPR staff time. Areas where dumping recurs will be evaluated for potential barrier placement. Additional monitoring and enforcement will be provided as needed.

5.5.2 Hydrological Management

As stated in Section 2.3.3, a dry streambed associated with Moody Canyon runs east to west through the southern portion of the Property, and an unnamed dry drainage runs east to west through the northernmost fragment of the Property. Outside of these dry wash features, there is one vernal pool present along the edge of the main east-west unpaved access road just southeast of the in-holding.

Management Directive D.3 – Retain the on-site vernal pool in its natural condition (*Priority 1*)

***Implementation Measure D.3.1*:** DPR will conduct visual assessments of the condition of the vernal pool present along the edge of the main east-west unpaved access road just southeast of the in-holding in conjunction with habitat monitoring (see A.1.1). In the event vernal pool conditions are considered poor (e.g., damages to pool), follow up surveys will be conducted to determine if management actions are necessary. Where necessary, DPR will determine appropriate measures to restore vernal pool conditions.

5.5.3 Emergency, Safety and Police Services

Management Directive D.4 – Cooperate with public health and safety personnel to achieve their goals while helping to reduce or eliminate impacts to biological and cultural resources within the Property (*Priority 1*)

> ***Implementation Measure D.4.1*:** DPR will allow law enforcement officials and all medical, rescue and other emergency agencies to access the Property as necessary to enforce the law and carry out operations necessary to protect the health, safety, and welfare of the public. DPR will coordinate with the applicable agencies to inform field personnel of the locations of particularly sensitive biological and significant cultural resources and how to minimize damage to these resources.

5.5.4 Adjacency Management Issues

As described in Section 2.4.2, there is open space adjacent to the northern and western boundaries of the Property with urban residential development beyond the open space to the north and San Ysidro middle school located beyond the open space to the west. Open space is also adjacent to the southern and eastern boundaries of the Property owned by private entities, the City of San Diego, and Caltrans.

Management Directive D.5 – Coordinate with adjacent open space landowners and land managers (*Priority 1*)

> ***Implementation Measure D.5.1:*** DPR will coordinate with the City of San Diego and Caltrans (in association with their contiguous open spaces) on an annual basis, or more regularly as needed, to ensure contiguous preserved land is managed consistently and in accordance with the MSCP. Coordination will include discussion of conservation goals; threats; methodology for management, monitoring, restoration, and reintroduction; results of management tasks and scientific research; and potential future projects.

Management Directive D.6 - Enforce Property boundaries (*Priority 1*)

> ***Implementation Measure D.6.1*:** DPR and Park Rangers will enforce, prevent, and/or remove illegal intrusions into the Property (e.g., orchards, decks) on an annual and complaint basis.

Management Directive D.7 – Educate residents in surrounding areas about Property adjacency issues (*Priority 2*)

> ***Implementation Measure D.7.1*:** DPR will post the RMP on the DPR website (www.sdparks.org) to inform surrounding residents of Property adjacency

issues including access, invasive plant impacts and appropriate landscaping, construction or disturbance within the Property boundaries, pet intrusion, and fire management. See also B.3.1.

5.6 Cultural Resources Element (E)

The goal of this section of the RMP is long-term preservation of cultural resources, public interpretation of cultural resources, and interaction with the bands of Native Americans in whose traditional tribal territory this Property exists.

Management Directive E.1 – Preserve and protect significant cultural resources to ensure that sites are available for appropriate uses by present and future generations (*Priority 2*)

Potential impacts to cultural resources within the Property are most likely to result from fire suppression and maintenance activities. In order to protect these resources, it is necessary that impacts be prevented, reduced, eliminated, or adverse effects mitigated.

***Implementation Measure E.1.1*:** DPR will provide maps of sensitive cultural resources with sufficient buffer around them within the Property to the City of San Diego Fire Department San Ysidro Fire Station 29 for inclusion in their wildland pre-response plans so that these resources can be avoided to the maximum extent possible.

***Implementation Measure E.1.2*:** DPR and Park Rangers will avoid and protect cultural sites with an appropriate buffer when conducting management and maintenance activities within the Property including, but not limited to, fuel management and habitat restoration activities. If access to cultural sites is necessary, manual methods will be used to the maximum extent possible, and any ground disturbance will be monitored by a County-approved archaeologist and Native American monitor.

***Implementation Measure E.1.3*:** DPR staff will note the condition and status of cultural resources on site as part of routine monitoring activities conducted on a five-year basis (or on a more frequent basis as determined by DPR) and remedial measures shall be taken if damage is noted. Monitoring activities should also photo-document site conditions so that comparisons can be made over time. Monitoring efforts should focus on known significant resources, resources of recognized importance to local Native American groups, and resources at increased risk of disturbance or vandalism.

Currently, a series of dirt roads and trails criss-cross the Property and are used for unauthorized hiking, biking, and off-road vehicle use. Impacts to cultural resources are most likely to result from continued and increased use of these roads by the public and future vegetation management. Monitoring

should currently be concentrated in the vicinity of these dirt roads and trails as resources are crossed by or are in close proximity. It is anticipated that these sites are at greatest risk from public vandalism. A figure showing the resources that should be monitored is included in the confidential appendix of the Phase I Cultural Resources Report for the Property (Appendix C).

Monitoring of the sites in the Property will follow the guidelines found in the County of San Diego *Report Format and Content Requirements, Cultural Resources: Archaeological and Historical Resources* (2007). All site location information will be kept strictly confidential, and will be available only for qualified cultural resource staff and land managers. Site locations will not be shown on maps or divulged to the public.

***Implementation Measure E.1.4*:** Park Rangers will actively protect known cultural resource sites from vandalism and other forms of human impact in accordance with County of San Diego ordinances (Title 4; Public Property, Division 1; Parks and Beaches, Article 2, Section 41.113), and applicable state and federal laws. If a person(s) is suspected of vandalism to cultural resources, Park Rangers will notify the appropriate law enforcement authorities.

If vandalism and damage continue or increase, DPR will coordinate with the appropriate authorities and local Native American tribal representatives to develop additional measures to protect cultural resources, as needed.

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APPENDIX A

Management Directive and Implementation Measure Summary Table
Furby-North Property

Management Directives	Implementation Measures	Timeframe	Responsible Party*
	BIOLOGICAL RESOURCES ELEMENT (A)		
A.1 Conduct habitat monitoring to ensure City of San Diego MSCP Subarea Plan goals and DPR objectives are met (*Priority 1*)	*A.1.1*: DPR will conduct habitat monitoring for jojoba-San Diego sunflower association (equivalent to Holland's *maritime succulent scrub*) and other habitat types within the Preserve at five-year intervals. An updated vegetation community map will be developed utilizing the Vegetation Classification Manual (AECOM et.al. 2011). On-going monitoring within the Property will identify any adverse changes in vegetation community distribution and habitat quality, such as changes from fire, invasion by non-natives or decline of existing species, and indicate if modifications to current management actions are needed. More frequent monitoring may be required following significant fire within the Property. The main product of this monitoring will be a report which will include a discussion of monitoring objectives, monitoring methods to meet those objectives and an updated vegetation community map. *A.1.2*: DPR will conduct general wildlife and rare plant surveys at five-year intervals utilizing and refining baseline monitoring methods to facilitate trend and distribution status analysis. This information will be included in the monitoring report. *A.1.3*: DPR will conduct monitoring for invasive plant species at five-year intervals to assess invasion or re-invasion by invasive, non-native plant species within the Property. Surveys will be focused in areas where invasive, non-native plants have been detected in the past and in the vicinity of special-status species, but will also look for new occurrences in the Property. The surveys will document the location of invasive, non-native plants and quantify the numbers/acreages of individual species within the Property. This information will be included in the monitoring report.	Every 5 years Every 5 years Every 5years	RMD RMD RMD
A.2 Meet the corridor monitoring requirements of the MSCP (*Priority 2*)	*A.2.1*: DPR will conduct corridor monitoring at five-year intervals to determine movement into contiguous open space to the north and northeast in conjunction with habitat monitoring, and general wildlife and rare plant surveys (see Implementation Measures A.1.1 & A.1.2). The scope of monitoring will be sufficient to determine if corridors are being utilized, but not to determine the extent of use (i.e., how many individuals of any given species use a corridor).	Every 5years	RMD
A.3 Preparation of biological monitoring report (*Priority 1*)	*A.3.1:* DPR will prepare a biological monitoring report that summarizes the monitoring goals, objectives, methodology and results of the biological monitoring efforts described in implementation measures A.1.1 to A.1.3 and A.2.1. The report will also address the effectiveness of current stewardship and management actions, identify the need for corrective actions, and include recommendations for adaptive management.	Every 5years	RMD
A.4 Comply with applicable conditions of coverage for City of San Diego MSCP Subarea Plan Covered Species (*Priority 1*)	DPR will implement the habitat-based management and monitoring guidelines as outlined in Table 3-5 of the City of San Diego MSCP Subarea Plan for all MSCP covered species within the Property, as well as the species-specific measures described below. <u>California Gnatcatcher</u> *A.4.1*: DPR will conduct focused surveys prior to restoration or enhancement for California gnatcatcher in all suitable habitats on the Property to establish a baseline, identify all locations of the California gnatcatcher, and determine whether the species is breeding on-site. If feasible, baseline surveys will include annual surveys for three years to capture the natural fluctuation of this species on-site. Follow up surveys will be conducted post restoration to aid in determining effectiveness. Long-term monitoring will be conducted thereafter every five years in conjunction with Implementation Measure A.1.2. <u>Coastal Cactus Wren</u> *A.4.2*: DPR will conduct focused surveys prior to restoration or enhancement for coastal cactus wren in all suitable habitats on the Property to establish a baseline, identify all locations of the cactus wren, and determine whether the species is breeding on-site. If feasible, baseline surveys will include annual surveys for three years to capture the natural fluctuation of this species on-site. Follow up surveys will be conducted post restoration to aid in determining effectiveness. Long-term monitoring will be conducted thereafter every five years in conjunction with Implementation Measure A.1.2.	Annually for 3 years then every 5 years Annually for 3 years then every 5 years	RMD RMD
A.5 Provide management and monitoring of other special-status species (Lists A and B of County Sensitive Plant List) (*Priority 1*)	*A.5.1*: DPR will conduct surveys of County List A and List B plant species, not covered by the MSCP, within the Property including south coast saltbush, San Diego bur-sage, and cliff spurge. Surveys will document the locations of species populations, and quantify the number of individuals and/or the acreage of these populations. These surveys will be conducted at five-year intervals in conjunction with habitat monitoring (refer to implementation measure A.1.1).	Every 5 years	RMD
A.6 Reduce, control, or where feasible eradicate non-native and/or invasive wildlife known to be detrimental to native species and/or the local ecosystem (*Priority 2*)	*A.6.1*: DPR will conduct surveys for the presence of non-native and/or invasive wildlife species of management concern, including Argentine ants, at five-year intervals in conjunction with habitat monitoring and general wildlife surveys (see A.1.1 & A.1.2).	Every 5 years	Park Rangers
A.7 Allow for future research opportunities within the Property (*Priority 2*)	*A.7.1*: DPR will accept and review proposals for scientific research, monitoring, and habitat restoration and enhancement activities which are permitted within the MHPA. Proposed research activities will be subject to approval by DPR. All such activities must obtain any necessary permits and shall be consistent with this RMP.	On-going	DPM & RMD

Management Directives	Implementation Measures	Timeframe	Responsible Party*
	Additionally, any person conducting research of any kind within the Property shall obtain a Right-of-Entry Permit from DPR, which will outline the precautions to be taken to preserve and protect sensitive biological and cultural resources within the Property, and require results of any research to be made available to DPR.		
	VEGETATION MANAGEMENT ELEMENT (B)		
B.1 Restore degraded habitats to protect and enhance populations of rare and sensitive species (*Priority 1*)	*B.1.1*: Explore opportunities to enhance the small patch of highly disturbed cholla on the north end of the Property just west of the vernal pool complex by removing short-pod mustard and yellow star thistle (see Implementation Measure B.2.2 below) and then planting prickly pear, lemonadeberry and additional cholla. Restoration activities will utilize current, accepted techniques and avoid/minimize impacts to sensitive species or native habitats.	On-going	OPS & RMD
	B.1.2: Explore active revegetation opportunities within the two areas of coastal sage scrub vegetation communities on-site. Restoration activities will utilize current, accepted techniques and avoid/minimize impacts to sensitive species or native habitats. Proposed revegetation activities will use only local native species.	On-going	OPS & RMD
	B.1.3: Explore active revegetation opportunities within the urban/developed areas in the southern portion of the Property. These areas will be revegetated with maritime succulent scrub. Restoration activities will utilize current, accepted techniques and avoid/minimize impacts to sensitive species or native habitats. Proposed revegetation activities will use only local native species.	On-going	OPS & RMD
	B.1.4: As I-138 mitigation requests are made to DPR, DPR will conduct focused surveys for vernal pool associated plant and animal species to confirm the quality and restoration potential of the pool located in the vernal pool complex in the north-eastern portion of the Property.	On-going	RMD
	B.1.5: The Biological Diversity Report for the Property states that there is a current need for active restoration for unauthorized trails within the Property (TAIC 2011). Prior to restoration activities, the closed trails will be decompacted (e.g., ripped to a depth or 18 inches) wherever site topography and soil conditions permit. The trails will then be imprinted with a local, native coastal sage scrub seed mix. Soil stabilization methods using bio-engineering techniques and natural materials (e.g., coconut fiber rolls and bonded fiber matrices [BFM]) will be applied to stabilize soils and prevent erosion. Any seed materials will be thoroughly inspected and all non-native or unidentifiable seed material removed to avoid potential contamination.	On-going	OPS & RMD
B.2 Reduce, control, or where feasible eradicate non-native plants that are known to be detrimental to native species and/or the local ecosystem (*Priority 1*)	*B.2.1*: DPR staff will coordinate with the County of San Diego Department of Environmental Health to treat stands of garland chrysanthemum with herbicide (e.g., Transline) early in the season (e.g., prior to seed-set) followed by active revegetation (implementation measure B.1.3), to ensure this species does not recolonize.	On-going	RMD & DEH
	B.2.2: DPR staff will coordinate with the County of San Diego Department of Environmental Health to treat the patches of Malta starthistle and short-pod mustard that were identified during the 2011 biological resources inventory surveys. Malta starthistle will be treated with appropriate herbicide from December through April during the seedling to early rosette stage. Habitat will be allowed to passively restore after treatment, except the area just west of the vernal pool complex that will potentially be actively restored (see Implementation Measure B.1.1 above).	On-going	RMD & DEH
	B.2.3: The main east-west unpaved access road will be considered a high priority area by DPR staff for monitoring of invasive non-native plants because vernal pools and sensitive plant species occur along the edges of the road. In addition, the snake cholla in the southwest area of the Property which supports cactus wren will also be monitored closely by DPR staff for invasive non-native plant species.	Every 5 years	RMD & Park Rangers
	B.2.4: DPR will assess and pursue mitigation opportunities that implement invasive, non-native plant removal within the Property. Precedence will be given to those areas occupied by species identified as high priority, followed by moderate and then low priority species.	As-needed	DPM, DEV & RMD
B.3 Manage and minimize the expansion of invasive, non-native plants within the Property (*Priority 2*)	*B.3.1*: DPR will implement an educational program for adjacent residents in order to discourage the introduction of invasive, non-native plants into the Property. Provided information will discuss invasive plants harmful to the Property, and prevention methods. The program may also encourage residents to voluntarily remove invasive, non-native plants from their landscaping. See also implementation measure D.7.1.	On-going	DPM & RMD
B.4 Provide for necessary fire management activities that are sensitive to biological and cultural resources protection (*Priority 1*)	*B.4.1*: The existing east-west dirt road within the Property acting as an access road will be maintained annually to keep it fuel free. In addition, DPR will continue to coordinate with CAL FIRE and the City of San Diego Fire Department including the San Ysidro Fire Station 29, to determine what improvements need to be made to make fire response feasible throughout the Property.	Annually	Park Rangers
	B.4.2: Based on analysis, vegetation management beyond invasive non-native plant removal is not a current need within the Property to address wildfire issues. The need for vegetation management will be assessed through implementation measure A.1.1. DPR will coordinate with CAL FIRE and the City of San Diego Fire Department including the San Ysidro Fire Station 29 to assess the future need to develop an integrated Vegetation Management Plan (VMP) that will allow environmental documentation for strategic fuels management to be conducted when needed. The VMP will also identify likely locations for equipment staging	Annually	Park Rangers

Management Directives	Implementation Measures	Timeframe	Responsible Party*
	areas and fire breaks, assisting fire fighting activities to avoid sensitive species and known cultural sites, if feasible. In addition, the VMP will include post-fire management activities to enhance natural plant recovery and succession, restore long-term ecosystem health and processes, and minimize impacts to sensitive biological and cultural resources.		
PUBLIC USE, TRAILS & RECREATION ELEMENT (C)			
C.1 Limit types of public uses to those that are appropriate for the Property (*Priority 1*)	*C.1.1*: Park Rangers will patrol and monitor the Property for any unauthorized public access. Park Rangers will document any illegal access and use of the Property, and inform any unauthorized persons observed on site that the Property is not open to the public and request that they leave. *C.1.2*: Park Rangers will enforce the following prohibited uses and restrictions within the Property. Park rangers may call the sheriff for legal enforcement, as appropriate. a. Off-road or cross-country vehicle and public off-highway recreational vehicle activity are considered incompatible uses in the MSCP preserve, and are therefore prohibited in the Preserve, except for law enforcement, Preserve management, and/or emergency purposes. b. Hunting or discharge of firearms is an incompatible use in the MSCP preserve, and is therefore prohibited in the Property, except for law enforcement, and/or emergency purposes. c. Poaching or collecting plant or animal species, archaeological or historical artifacts or fossils from the Preserve is generally prohibited; however, the County may authorize collecting upon approval for scientific research, revegetation or restoration purposes, or species recovery programs. In addition, impacts to historic features are prohibited except upon approval by the County. d. Camping (including homeless and itinerant worker camps) e. Feeding wildlife f. Domestic animals g. Smoking h. Campfires/Open Flames i. Littering/Dumping *C.1.3*: Park Rangers will ensure that prohibited uses are clearly specified on posted signage.	On-going On-going	Park Rangers Park Rangers
C.2 Manage access in sensitive biological and cultural resource areas within the Property (*Priority 1*)	*C.2.1*: DPR has identified and mapped sensitive vegetation communities, special-status plant and wildlife species (including narrow endemics and County-listed species), and cultural sites in the Property so that these areas can be avoided and/or monitored. Updated information on sensitive resources in relation to access points (i.e., existing access roads and unofficial trails) will be obtained in conjunction with routine monitoring activities (see implementation measures A.1.1, A.1.2, C.5.1 and E.1.3).	Every 5 years	RMD
C.3 Install and maintain fencing and gates within the Property (*Priority 1*)	*C.3.1*: DPR will install fencing and/or gates at major access points to restrict unauthorized access and protect sensitive resources from impacts. Fences and gates will be designed and located so they do not impede wildlife movement or impact cultural resources. *C.3.2*: Park Rangers will regularly inspect and maintain all installed fencing and gates within the Property. Fencing segments and gates will be repaired or replaced as necessary.	As-needed On-going	Park Rangers Park Rangers
C.4 Properly maintain access road and trails for user safety, and to protect biological and cultural resources (*Priority 1*)	*C.4.1*: Park Rangers will monitor the existing east/west dirt road in the northern area of the Property currently used for management purposes for degradation and off-road access and use. Park Rangers will provide any necessary repair/maintenance as needed.	On-going	Park Rangers
C.5 Install and maintain appropriate signage to effectively communicate Park rules and regulations (*Priority 1*)	*C.5.1*: Park Rangers will install the following signs on the Property; Off-roading and ATV Vehicles Prohibited 41.130 and 76.101(a) and No Dumping. *C.5.2:* Park Rangers will regularly inspect and maintain all posted signs within the Property in good condition. Signs will be kept free from vandalism and will be repaired or replaced as necessary.	One-time On-going	Park Rangers Park Rangers
OPERATIONS & FACILITY MAINTENANCE ELEMENT (D)			

Management Directives	Implementation Measures	Timeframe	Responsible Party*
D.1 Maintain a safe and healthy environment within the Property (*Priority 1*)	*D.1.1*: DPR will prohibit the permanent storage of hazardous and toxic materials within the Property. Any temporary storage must be in accordance with applicable regulations, and otherwise designed to minimize any potential impacts.	On-going	DPM, RMD & Park Rangers
D.2 Enforce regulations regarding littering/dumping (*Priority 1*)	*D.2.1*: Park Rangers will enforce regulations regarding littering/dumping (County Code of Regulatory Ordinance Section 41.116). Penalties for littering and dumping will be imposed by law enforcement officers sufficient to prevent recurrence and reimburse costs to remove and dispose of debris, restore the area if needed, and pay for additional DPR staff time. Areas where dumping recurs will be evaluated for potential barrier placement. Additional monitoring and enforcement will be provided as needed.	On-going	DPM & Park Rangers
D.3 Retain the on-site vernal pool in its natural condition (*Priority 1*)	*D.3.1*: DPR will conduct visual assessments of the condition of the vernal pool present along the edge of the main east-west unpaved access road just southeast of the in-holding in conjunction with habitat monitoring (see A.1.1). In the event vernal pool conditions are considered poor (e.g., damages to pool), follow up surveys will be conducted to determine if management actions are necessary. Where necessary, DPR will determine appropriate measures to restore vernal pool conditions.	On-going	Park Rangers
D.4 Cooperate with public health and safety personnel to achieve their goals while helping to reduce or eliminate impacts to biological and cultural resources within the Property (*Priority 1*)	*D.4.1*: DPR will allow law enforcement officials and all medical, rescue and other emergency agencies to access the Property as necessary to enforce the law and carry out operations necessary to protect the health, safety, and welfare of the public. DPR will coordinate with the applicable agencies to inform field personnel of the locations of particularly sensitive biological and significant cultural resources and how to minimize damage to these resources.	As-needed	DPM, RMD & Park Rangers
D.5 Coordinate with adjacent open space landowners and land managers (*Priority 1*)	*D.5.1*: DPR will coordinate with the City of San Diego and CALTRANS (in association with their contiguous open spaces) on an annual basis, or more regularly as needed, to ensure contiguous preserved land is managed consistently and in accordance with the MSCP. Coordination will include discussion of conservation goals; threats; methodology for management, monitoring, restoration, and reintroduction; results of management tasks and scientific research; and potential future projects.	Annually	RMD
D.6 Enforce Property boundaries (*Priority 1*)	*D.6.1*: DPR and Park Rangers will enforce, prevent, and/or remove illegal intrusions into the Property (e.g., orchards, decks) on an annual and complaint basis.	Annually	DPM & Park Rangers
D.7 Educate residents in surrounding areas about Property adjacency issues (*Priority 2*)	*D.7.1*: DPR will post the RMP on the DPR website (www.sdparks.org) to inform surrounding residents of Property adjacency issues including access, invasive plant impacts and appropriate landscaping, construction or disturbance within the Property boundaries, pet intrusion, and fire management. See also B.3.1.	On-going	RMD
CULTURAL RESOURCES ELEMENT (E)			
E.1 Preserve and protect significant cultural resources to ensure that sites are available for appropriate uses by present and future generations (*Priority 2*)	*E.1.1*: DPR will provide maps of sensitive cultural resources with sufficient buffer around them within the Property to the City of San Diego Fire Department San Ysidro Fire Station 29 for inclusion in their wildland pre-response plans so that these resources can be avoided to the maximum extent possible. *E.1.2*: DPR and Park Rangers will avoid and protect cultural sites with an appropriate buffer when conducting management and maintenance activities within the Property including, but not limited to, fuel management and habitat restoration activities. If access to cultural sites is necessary, manual methods will be used to the maximum extent possible, and any ground disturbance will be monitored by a County-approved archaeologist and Native American monitor. *E.1.3*: DPR staff will note the condition and status of cultural resources on site as part of routine monitoring activities conducted on a five-year basis (or on a more frequent basis as determined by DPR) and remedial measures shall be taken if damage is noted. Monitoring activities should also photo-document site conditions so that comparisons can be made over time. Monitoring efforts should focus on known significant resources, resources of recognized importance to local Native American groups, and resources at increased risk of disturbance or vandalism. Currently, a series of dirt roads and trails criss-cross the Property and are used for unauthorized hiking, biking, and off-road vehicle use. Impacts to cultural resources are most likely to result from continued and increased use of these roads by the public and future vegetation management. Monitoring should currently be concentrated in the vicinity of these dirt roads and trails as resources are crossed by or are in close proximity. It is anticipated that these sites are at greatest risk from public vandalism. A figure showing the resources that should be monitored is included in the confidential appendix of the Phase I Cultural Resources Report for the Property (Appendix C). Monitoring of the sites in the Property will follow the guidelines found in the County of San Diego *Report Format and Content Requirements, Cultural Resources: Archaeological and Historical Resources* (2007). All site location information will be kept strictly confidential, and will be available only for qualified cultural	One-time As-needed Every 5 years	RMD Park Rangers RMD & Park Rangers

Management Directives	Implementation Measures	Timeframe	Responsible Party*
	resource staff and land managers. Site locations will not be shown on maps or divulged to the public. *E.1.4*: Park Rangers will actively protect known cultural resource sites from vandalism and other forms of human impact in accordance with County of San Diego ordinances (Title 4; Public Property, Division 1; Parks and Beaches, Article 2, Section 41.113), and applicable state and federal laws. If a person(s) is suspected of vandalism to cultural resources, Park Rangers will notify the appropriate law enforcement authorities. If vandalism and damage continue or increase, DPR will coordinate with the appropriate authorities and local Native American tribal representatives to develop additional measures to protect cultural resources, as needed.	On-going	Park Rangers

* DEH = Department of Environmental Health
DEV = Development Division Staff
DPM = District Park Manager (Operations Division)
OPS = Operations Division Staff
RMD = Resource Management Division Staff

APPENDIX B

Biological Diversity Baseline Report
Furby-North Property
(See www.co.san-diego.ca.us/parks/management_plans.html)

APPENDIX C

Archaeological Resources Survey Report for the Furby-North Property, San Diego, California (Confidential)